United States Environmental Protection Agency

Fiscal Year 2005 Environmental Information Exchange Network Grant Program

Solicitation Notice

U.S. Environmental Protection Agency
Office of Environmental Information
Office of Information Collection
Information Exchange and Services Division
Information Exchange Partnership Branch
October 2004

Environmental Information exchange Network

Fiscal Year 2005 Environmental Information Exchange Network Grant Program Solicitation Notice

U.S. Environmental Protection Agency
Office of Environmental Information
Office of Information Collection
Information Exchange and Services Division
Information Exchange Partnership Branch

Fiscal Year 2005 Environmental Information Exchange Network Grant Program Solicitation Notice

Table of Contents

FY 2005 Environmental Information Exchange Network Grant Program Solicitation Notice

Overview Information

Agency Name and Office: U.S. Environmental Protection Agency (EPA), Office of Environmental Information (OEI)

Funding Opportunity Title: Fiscal Year (FY) 2005 Environmental Information Exchange Network Grant Program

Announcement Type: Initial Announcement; Subject to Availability of Funding Solicitation Notice

Catalog of Federal Domestic Assistance (CFDA) Number: 66.608

Dates:
- November 19, 2004 – Deadline for submitting questions about this notice to EPA
- December 6, 2004 – Question-and-answer teleconference for applicants (tentative)
- January 15, 2005 (midnight, applicant's local time) – Deadline for submitting applications to EPA
- May 2005 – Notifications sent to applicants regarding funding recommendations
- August/September 2005 – Issuance of FY 2005 Exchange Network Grant Program awards

Funding Opportunity Description: EPA and states, territories, and tribes are working together to develop a nationwide Environmental Information Exchange Network. The Exchange Network is an Internet- and standards-based, secure information network that facilitates the electronic reporting, sharing, integration, analysis, and use of environmental data from many different sources. The Exchange Network will make it easier for EPA and its partners to obtain the timely, accurate information they need when making decisions concerning human health and the natural environment.

The Exchange Network Grant Program provides funding to states, territories, tribes, and tribal consortia to help them develop the information management and technology (IM/IT) capabilities they need to participate in the Exchange Network. This grant program supports the acquisition and development of computer hardware/software needed to connect to the Exchange Network; the development of common data standards, formats, and trading partner agreements for sharing data over the Exchange Network; and the planning, development, and implementation of collaborative, innovative uses of the Exchange Network. This grant program may include the standardization, exchange, and integration of geospatial information to address environmental, natural resource, and related human-health issues.

The FY 2005 Exchange Network Grant Program includes three categories of assistance:

- Readiness Category – supports the development of information management and technology (IM/IT) capabilities needed to participate in the Exchange Network; provides up to $75,000 per tribal project and up to $150,000 per state/territorial project;
- Implementation Category – supports the development of Exchange Network data flows, data standards, eXtensible Markup Language (XML) schema, and Web services; provides up to $150,000 per tribal project and up to $300,000 per state/territorial project; and
- Challenge Category – supports the planning, development, and implementation of collaborative, innovative projects that demonstrate the value of the Exchange Network; provides up to $300,000 per tribal project and up to $750,000 per state/territorial project.

Award Information: The President's FY 2005 budget request includes $25 million for the Exchange Network Grant Program. This funding solicitation notice is subject to the availability of funds for this program in the FY 2005 annual appropriations for EPA. Authorization for the Exchange Network Grant Program over the past three years has been provided by annual appropriations for the Departments of Veterans Affairs, Housing and Urban Development, and Independent Agencies for FY 2002, FY 2003 (Public Law 108-7), and FY 2004 (Public Law 108-199).

EPA expects to award approximately 70 to 80 grants/cooperative agreements, but the exact number of awards will depend on the amount of EPA's appropriation for the grant program, on the number of applications submitted to EPA by the application deadline, and on the competitive review of the applications received.

EPA expects to issue the FY 2005 Exchange Network Grant Program awards in August/September 2005, and the standard period of performance for each project will be two years. If EPA anticipates having substantial involvement in a proposed project or if all or part of an award is to be issued as EPA-provided in-kind services (i.e., in lieu of direct funding), then EPA will issue the assistance agreement as a cooperative agreement, rather than a grant.

Eligibility Information: Eligible applicants for the FY 2005 Exchange Network Grant Program include states, the District of Columbia, territories, federally recognized Indian tribes, and tribal consortia and their agencies or departments. State, tribal, and territorial universities; local, town, county, or regional governments; and nonprofit organizations are *not* eligible to apply for the competitive assistance portion of this grant program in FY 2005. Regional air pollution control districts may apply for a grant *only if* they are legally considered to be a state agency under the applicable state laws. EPA encourages all eligible applicants to work with organizations that could make a valuable contribution to the development, expansion, and use of the Exchange Network (i.e., even if the organizations are not eligible to apply directly to EPA for funding from this grant program).

Application and Submission Information: The application package plus two copies must be submitted in hard copy to EPA Headquarters and postmarked by January 15, 2005 (i.e., midnight, applicant's local time). EPA will not review or fund any applications that are postmarked after January 15, 2005, or received from ineligible applicants.

Application and Review Information: All applications submitted to EPA by eligible applicants and postmarked by January 15, 2005, will be competitively evaluated by an EPA Review Panel based on the evaluation criteria outlined in the full solicitation notice.

Award Administration Information: EPA plans to notify applicants about its preliminary funding decisions in May 2005 and issue the awards in August/September 2005. After issuance, the awards will be monitored by EPA Regional Project Officers. Grantees must comply with all administrative and programmatic grant conditions outlined in the grant agreements. Each grantee will be required to submit semi-annual performance progress reports to EPA, describing the progress that has been achieved in meeting the grantee's goals and milestones.

Agency Contacts: Information about the Exchange Network Grant Program is available on the Internet at http://www.epa.gov/Networkg. Questions about this solicitation notice or the grant program in general may be addressed to Rebecca Moser, the Exchange Network Grant Program Manager, at moser.rebecca@epa.gov or (202) 566-1679. EPA Regional Coordinators are listed in Section VII of the full solicitation notice.

FY 2005 Environmental Information Exchange Network Grant Program Solicitation Notice

I. Funding Opportunity Description

I-1. Introduction

The U.S. Environmental Protection Agency (EPA) and its state, territorial, and tribal partners are working together to develop a nationwide Environmental information Exchange Network. The impetus for developing the Exchange Network arose from discussions between EPA and state environmental agencies – through the Environmental Council of the States (ECOS) – about the challenges of collecting, sharing, and using environmental information to protect and enhance human health and the natural environment. In 1998, EPA and ECOS formed the State/EPA Information Management Work Group (IMWG), and the IMWG provided the conceptual design for developing a nationwide information system network to collect and exchange environmental information more efficiently and effectively. The initial concept for the Exchange Network was described in the *Blueprint for a National Environmental Information Exchange Network* (October 2000) and further developed in the *Implementation Plan for the National Environmental Information Exchange Network* (February 2002). (See Section VIII for Web site links to these documents.)

In a relatively short period of time, the Environmental Information Exchange Network is becoming a reality. All 50 states and a number of tribes and territories have participated in developing the Exchange Network at some level. It is now a tangible Internet- and standards-based, secure information network that is being used to report and share environmental data from many different sources. The Exchange Network will make it easier for EPA and its partners to obtain the timely, accurate information they need when making decisions concerning human health and the natural environment.

The Exchange Network Grant Program provides funding to states, territories, tribes, and tribal consortia to help them develop the information management and technology (IM/IT) capabilities they need to participate in the Exchange Network. The level of participation in the Exchange Network will vary, depending on the business needs of particular partners. Most states/territories and some tribes have developed or are now in the process of developing "nodes" on the Exchange Network that will allow them to submit data to EPA and other partners, as well as publish their data on the Exchange Network by responding to queries from other partners. For some partners (e.g., tribes that have recently become involved in Exchange Network activities), it may be more appropriate to implement a "node client" at this time, which can submit, request, and receive data from other partners, but not publish their data on the Exchange Network. The Exchange Network has the flexibility to allow participation at various levels;

however, EPA's ultimate goal is for all state/tribes/territories to have the capability to exchange a wide variety of data to enhance environmental decision-making.

The Exchange Network Grant Program supports the acquisition and development of computer hardware/software needed to connect to the Exchange Network; the development of common data standards, formats, and trading partner agreements for sharing data over the Exchange Network; and the planning, development, and implementation of collaborative, innovative uses of the Exchange Network. This grant program may include the standardization, exchange, and integration of geospatial information to address environmental, natural resource, and related human-health issues.

EPA is now soliciting applications for the FY 2005 Exchange Network Grant Program from states, territories, tribes, and tribal consortia. This document is designed to help applicants develop applications that are well-developed and compatible with the overall development of the Exchange Network. This guidance describes the FY 2005 grant categories and amounts, suggested activities that grant applicants may wish to propose, eligibility criteria, application and submission information, application review criteria and procedures, award information, and EPA points of contact. In addition, the appendices provide definitions of key terms used in this document, a discussion of key Exchange Network data flows and suggested data flow activities for Exchange Network partners, step-by-step guidelines for developing Exchange Network nodes and selected data flows, general guidelines for ensuring high-quality projects, and detailed application instructions.

I-2. Program History

FY 2005 will be the fourth year of the Exchange Network Grant Program. In FY 2002, FY 2003, and FY 2004, this grant program provided approximately $65,000,000 to states, tribes, and territories to help them participate in the Exchange Network. The President's FY 2005 budget request includes an additional $25,000,000 for the Exchange Network Grant Program.

All states, the District of Columbia, 3 territories, and nearly 40 tribes have received grants and been involved in the development of the Exchange Network.
As of October 2004, the Exchange Network Grant Program had resulted in the development of 16 Exchange Network nodes, and a significant number of additional nodes are currently under development.

EPA and its partners are currently using or planning to use the Exchange Network to exchange data that relate to the following: Beaches (beaches water quality and closure data), Air Facility System (AFS), Air Quality System (AQS), Drinking Water Laboratory Results, electronic Discharge Monitoring Reports (e-DMR), Facility Registry System (FRS), Institutional Controls Tracking System (ICTS), Integrated Compliance Information System/National Pollutant Discharge Elimination System (ICIS-NPDES), National Emissions Inventory (NEI), National Pollution Prevention (P2) Results System, Resource Conservation and Recovery Act Information System (RCRAInfo), Safe

Drinking Water Information System (SDWIS), Source Water Protection (SWP), Toxics Release Inventory System (TRIS), Underground Injection Control (UIC), and Water Quality Monitoring. Appendix B of this document describes the status of some of the national environmental information systems, related EPA program office plans, and suggested data flow activities that grant applicants could propose.

A number of previously funded projects have demonstrated the potential of the Exchange Network to enhance environmental decision-making. Examples of several successful collaborative grant projects are described below:

- Electronic Discharge Monitoring Reports (e-DMR) Project. This project was led by the Michigan Department of Environmental Quality and has made it possible for regulated facilities within the state to submit Discharge Monitoring Reports (DMRs) to the state electronically, greatly reducing the cost and burden associated with submitting these reports in hard copy. The data from these DMRs are sent to Michigan's National Pollutant Discharge Elimination System (NPDES) using XML. The data can then be submitted to EPA through Michigan's Exchange Network node.
- Pacific Northwest Water Quality Data Exchange Project. This project was led by the Oregon Department of Environmental Quality and focused on the development of an XML schema for exchanging water quality data among states in the Pacific Northwest. This project has allowed project participants to share and obtain water quality data from one another by using their Exchange Network nodes.
- Beaches Monitoring Data Project. This project was led by the New Jersey Department of Environmental Protection and provides easy access to water quality monitoring data and beach closure information in partnership with Earth 911.
- Drinking Water Laboratory Results Project. This project was led by the New Hampshire Office of Information Technology and supported the electronic submission of drinking water data directly from laboratories to state drinking water programs and EPA.

These are just a few examples of the types of projects that EPA has funded in the past. For information on other state, territorial, and tribal activities, please see the grant activities that are described on the Exchange Network Grant Program Web site at http://www.epa.gov/Networkg.

I-3. Assistance Categories

The FY 2005 Exchange Network Grant Program will provide three categories of assistance: Readiness, Implementation, and Challenge. In general, these categories provide the following:

- Readiness Category – supports the development of information management and technology (IM/IT) capabilities (e.g., nodes and node clients) needed to participate in the Exchange Network; provides up to $75,000 per tribal project and up to $150,000 per state/territorial project;
- Implementation Category – supports the development of Exchange Network data flows, data standards, XML schema, and Web services; provides up to $150,000 per tribal project and up to $300,000 per state/territorial project; and

- Challenge Category – supports the planning, development, and implementation of collaborative, innovative projects that demonstrate the value of the Exchange Network; provides up to $300,000 per tribal project and up to $750,000 per state/territorial project.

These grant categories are described in more detail below. Applicants may also wish to refer to Appendices A, B, and C, when developing their applications. **Appendix A** defines important terms used in this notice. **Appendix B** describes the status and plans for a number of national environmental information systems and suggested data flow activities for Exchange Network partners. **Appendix C** provides draft guidelines on developing an Exchange Network node and implementing several Exchange Network data flows. (These guidelines may be updated periodically. Please check http://www.epa.gov/Networkg for the most up-to-date version.)

Readiness Category

The Readiness Category supports the development of basic IM/IT capabilities that are needed to participate in the Exchange Network. *See Section III-3 for eligibility limitations that apply to the Readiness Category.* The following types of activities could be proposed for funding under the Readiness Category:

- Develop an Exchange Network node within a reasonable period of time (e.g., one to two years, depending on the applicant's current capabilities).
- Implement a node client application (for tribes only).
- Obtain, develop, or implement other IT hardware or software that will enhance participation in the Exchange Network (e.g., servers, processors, storage devices/media, telecommunications products/services, and computer peripherals).
- Develop Web-based services, security enhancements, or automated data quality checking/validation tools that will enhance the availability, integrity, quality, and utility of data exchanged over the Exchange Network.

Implementation Category

The Implementation Category supports the implementation of Exchange Network nodes and node clients, but focuses primarily on the reporting and exchange of data using the Exchange Network. *See Section III-3 for eligibility limitations that apply to the Implementation Category.* The following types of activities could be proposed for funding under the Implementation Category:

- Implement one or more of the following data flows using the Exchange Network:
  - Air Facility System (AFS)
  - Air Quality System (AQS)
  - Electronic Discharge Monitoring Reports (e-DMR)
  - Facility Registry System (FRS)
  - Institutional Controls Tracking System (ICTS)
  - Integrated Compliance Information System—National Pollutant Discharge Elimination System (ICIS-NPDES)
  - National Emissions Inventory (NEI)
  - National Pollution Prevention (P2) Results System
  - Resource Conservation and Recovery Act Information System (RCRAInfo)

- Safe Drinking Water Information System (SDWIS)
- Source Water Protection (SWP) Data Exchange (under development)
- Toxics Release Inventory System (TRIS)
- Underground Injection Control (UIC) Database (under development)
- Water Quality Monitoring Data Exchange (STORET)

Data flow implementation includes things such as obtaining the appropriate XML schema, establishing a Central Data Exchange (CDX) Web account, mapping the applicant organization's data to the XML schema, verifying the data format, and submitting the data to EPA and/or other Exchange Network partners.

- Implement other types of environmental, natural resource, or human health data flows (regulatory or voluntary, state/territory/tribe-to-EPA, facility-to-state/territory/tribe, state-to-state, etc.) using the Exchange Network. Such data flows could either augment federal programs or focus on supporting state/territorial/tribal environmental programs. An example of such a project might be to develop Exchange Network data flows that support environmental performance self-certification or other performance-based programs. Another example might be to develop data flows that build on successful EPA regional environmental initiatives, such as Region 10's pollution prevention results measurement project (http://www.pprc.org/measure/index.cfm).
- Use the Exchange Network to integrate data from different sources and share integrated data with other partners.
- Develop a data standard through the Environmental Data Standards Council (EDSC) development process for use by Exchange Network partners. (See http://www.epa.gov/edr and http://www.envdatastandards.net.)
- Develop an XML schema for use by Exchange Network partners, incorporating EDSC-approved data standards as applicable.
- Develop a project that uses approved data standards to link previously disconnected data assets. Projects could include things such as implementing the EDSC-approved Facility Identification data standard to improve the utility of locational data for industrial facilities (as documented in FRS) or using the Hydrographic Data Content Standard for Coastal and Inland Waterways (currently under review) (http://www.geo-one-stop.gov) to standardize locational data references for water monitoring stations [as documented in the National Hydrography Dataset (NHD)].
- Use the Exchange Network to exchange geospatial data to enhance environmental decision-making and programmatic operations. An example might be a project to share state Source Water Protection SWP data with EPA and other partners, including source water area (SWA) geospatial polygons, linked to the SDWIS public water system well and intake inventory.
- Demonstrate the use of data, published as Web services by other Exchange Network partners. This use could include the display, analysis, combination, and/or integration of data into local applications. (See http://www.exchangenetork.net, "Tool Box" for a listing of available Web services.)
- Publish data as Web services that enhance the ability of Exchange Network partners to analyze, integrate, and use those data. These Web services could be selected from the Web services listing on the Exchange Network website or developed by the grantee. New Web services, as well as the XML schema they use, must be registered on the Exchange Network Registry.

Challenge Category
The Challenge Category supports the planning, development, and implementation of collaborative, innovative projects that demonstrate the value of the Exchange Network. EPA encourages applicants to collaborate with other state/territorial/tribal agencies, as well as other organizations that could make a valuable contribution to the development and use of the Exchange Network (i.e., even if these organizations are not eligible to apply directly to EPA for funding from this grant program). *See Section III-3 for examples of the organizations that may be interested in collaborating with applicants and for eligibility limitations that apply to the Challenge Category.*

The following types of activities could be proposed for funding under the Challenge Category:

- Pursue any of the activities listed under the Implementation Category above, provided these activities are done in collaboration with other Exchange Network partners.
- Use the Exchange Network to exchange data that have not previously been available (e.g., environmentally-related human health data; data needed to fill current data gaps; or data related to pollution prevention practices, technologies, or case studies). One example of such a project might be to collect and exchange environmental and related human health data to support efforts by EPA and the Centers for Disease Control and Prevention to enhance the Environmental Public Health Tracking System. Another example might be to develop a collaborative project to share state UIC data (including geospatial coordinates) with EPA to support a national UIC program.
- Use the Exchange Network to exchange data needed to address regional environmental issues (e.g., for the Great Lakes, Long Island Sound, Chesapeake Bay, U.S./Mexico border, Gulf of Mexico, etc.). One example of such a project would be to use the Exchange Network to share watershed monitoring data and the analytical results produced by watershed analysis tools.
- Enhance information security controls, such as identity proofing, to ensure the security of data transactions among Exchange Network partners.
- Develop applications that use data available through the Exchange Network (via Web services) to enhance decision-making, data analyses, risk assessments, and environmental monitoring.

II. Award Information

II-1. General Information

The President's FY 2005 budget request includes $25,000,000 for the Exchange Network Grant Program. Funding for this program in FY 2005 is subject to the availability of funds in EPA's FY 2005 appropriations. Authorization for the Exchange Network Grant Program over the past three years has been provided by annual appropriations for the Departments of Veterans Affairs, Housing and Urban Development, and Independent

Agencies for FY 2002, FY 2003 (Public Law 108-7), and FY 2004 (Public Law 108-199).

The Catalog of Federal Domestic Assistance number for the Exchange Network Grant Program is 66.608 (http://www.cfda.gov). This funding solicitation notice is the initial announcement concerning the FY 2005 grant program, and no other announcements are planned at this time.

In FY 2005, EPA expects to award approximately 70 to 80 awards. The exact number of awards will depend on the amount of EPA's appropriation for this grant program, on the number of eligible applications submitted to EPA and postmarked by the application deadline, and on the competitive review of the applications received. EPA will set aside approximately ten percent of the appropriated funds for tribal assistance agreements, but the number and total amount of tribal grants will depend on the number of tribal applications submitted and on the competitive review of those applications.

II-2. Assistance Instrument: Grant or Cooperative Agreement

Assistance agreements are used by EPA to transfer money, services, or anything of value to a recipient to accomplish a public purpose. Assistance agreements funded through the Exchange Network Grant Program may be issued in the form of a grant or a cooperative agreement. EPA has the authority to determine whether a grant or cooperative agreement is the most appropriate vehicle for a particular assistance agreement, but EPA will consider the applicant's preference when making this determination.

If an applicant expects to need only minimal involvement by EPA during the proposed project, then the applicant should request assistance in the form of a *grant.*

If the applicant expects to need substantial involvement by EPA during the project, then the applicant should request assistance in the form of a *cooperative agreement.* Substantial involvement by EPA may involve the following: 1) intense monitoring by EPA; 2) joint operational involvement, participation, and/or collaboration between EPA and the grantee; 3) EPA prior review or approval of project phases or the substantive provisions of proposed contracts found within the scope of the agreement; 4) EPA approval of key recipient personnel; and/or 5) EPA collaboration regarding the scope of work, organizational structure, staffing, mode of operation and other management processes (i.e., assuming the principal purpose of the project is *not* to acquire goods or services for EPA). Grantees that are awarded cooperative agreements are required to work closely with the EPA Regional Project Officer and other EPA personnel, as determined by EPA, during the performance of the project.

Applicants who are applying for Challenge Grants should request assistance in the form of a cooperative agreement, due to the collaborative nature of these projects and the need to ensure that these multi-partner projects are well-coordinated with EPA and other Exchange Network partners.

II-3. Funding Mechanism: Direct Funding and/or In-Kind Services

Applicants that request assistance in the form of a cooperative agreement, may also indicate whether they would prefer to receive an award as direct funding, as EPA in-kind services (in lieu of direct funding), or as a combination of both direct funding and in-kind services. EPA will consider applicant requests for in-kind services, but EPA has the authority to decide whether in-kind services will be provided. This decision generally depends on whether the project can be accomplished more efficiently by utilizing EPA in-kind services, whether the scope of the proposed project is within the scope of the vehicle that EPA might use to provide in-kind services (e.g., an existing contract or interagency agreement), and whether the vehicle that EPA might use to provide in-kind services has sufficient capacity to handle the additional workload. If EPA decides to issue an award in the form of in-kind services, the delivery of these in-kind services must be directed and overseen by EPA, and *not* by the grantee. EPA's provision of in-kind services generally includes, but is not necessarily limited to, developing Statements of Work, providing technical direction to the contractor, reviewing/approving deliverables, and reviewing/approving progress reports and invoices.

II-4. Performance Partnership Grants or Consolidated Grants

An applicant whose organization has a Performance Partnership Grant (PPG) with EPA, may request that if his/her FY 2005 Exchange Network grant application is recommended for funding, that the award be incorporated into the PPG. The authority to incorporate Exchange Network Grants into PPGs is discussed in a notice entitled, "Performance Partnership Grants," that was published in the *Federal Register* on August 20, 2004 (69 FR 51756, http://www.epa.gov/fedrgstr/EPA-GENERAL/2004/August/Day-20/g19152.pdf).

Similarly, a territorial applicant whose territory has a Consolidated Grant (CG) with EPA may request that if his/her FY 2005 Exchange Network grant application is recommended for funding, that the award be incorporated into the CG (Public Law 95-134, Title 5, Omnibus Territories Act of 1977).

III. Eligibility Information

III-1. Eligible Applicants

Eligible applicants include states, the District of Columbia, U.S. territories (i.e., American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands), federally recognized Indian tribes, and tribal consortia and their agencies or departments (excluding universities).

The following entities are *not* eligible to apply for assistance from the competitive FY 2005 Exchange Network assistance program: state, territorial, and tribal universities;

city, town, county, or regional governments; nonprofit organizations; or associations of co-regulatory agencies or departments (e.g., associations of government officials that focus on particular environmental or information technology issues). A regional air pollution control district may apply for a grant *only if* it is legally considered to be a *state agency* under the applicable state law.

EPA encourages all applicants to work with organizations that could contribute to the development, expansion, and use of the Exchange Network, even if such organizations are not themselves directly eligible to apply for a grant. (See Section III-3 for examples.)

III-2. Cost Sharing or Matching

No cost-sharing or matching of funds is required by grant applicants.

III-3. Other Eligibility Information

Eligibility will be determined at the level of the state/territorial/tribal agency or department. An applicant may apply for and receive more than one category of grant (e.g., both an Implementation and Challenge Grant), *if* the proposed projects are different and there is no overlap in the proposed project activities. Based on the activities described in this guidance for the different grant categories, the applicant should determine which grant category (i.e., Readiness, Implementation, or Challenge) is most appropriate for the type of project he/she wishes to propose. If an applicant needs assistance, he/she should contact Rebecca Moser, the Exchange Network Grant Program Manager, or the Regional Coordinator (Section VII). An applicant should *not* submit similar or identical applications for two separate assistance categories (e.g., both Readiness and Implementation). If this occurs, EPA will decide which assistance category is the most appropriate and evaluate the application under only one category.

Coordination between Environmental and Information Management/Technology Offices
All applicants must ensure that there is sufficient involvement by their organization's information management and technology (IT/IM) offices and by the appropriate environmental media programs. The involvement of both IM/IT and environmental media programs is essential in ensuring that the Exchange Network is developed in ways that best address environmental business needs. Coordination that has already occurred or will occur between the IT/IM offices and environmental media programs should be described in the applicant's cover letter and work plan.

Collaboration with Other Organizations
A number of organizations that are not directly eligible for funding from this grant program may be interested in collaborating with eligible applicants to advance the development and use of the Exchange Network. EPA encourages all applicants to work with such organizations in developing their applications and implementing their projects, if funded. Such organizations might include *state/tribal/territorial universities* or *groups/associations that represent the interests of EPA's co-regulators/co-implementers*

(e.g., state/territorial/tribal environmental or information technology agencies). Examples include organizations such as the State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) (http:// http://www.cleanairworld.org), the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) (http://www.astswmo.org), the Association of State Drinking Water Administrators (ASDWA) (http://www.asdwa.org), the National Pollution Prevention Roundtable (http://www.p2.org), and the Pollution Prevention Resource Exchange (http://www.p2rx.org).

Readiness Category Eligibility Requirements

The Readiness Category is designed to help applicants develop the basic information technology infrastructure they need to participate in the Exchange Network. If applying for an Readiness Category award and planning to develop an operational node or implement a node client, the applicant must describe in his/her application work plan the tasks/milestones that will be pursued to ensure that the node or node client is operational by the end of the two-year project period. (See Appendix E for the format of the work plan.)

A recipient of two previous Readiness Category awards should have had sufficient time and financial support to develop the technical infrastructure needed to participate in the Exchange Network. An applicant who has already received *two* Readiness Category awards is not eligible to apply for another Readiness Category award in FY 2005; EPA encourages such applicants to submit an application for the Implementation Category or the Challenge Category. Applicants who have already received two Readiness Category awards and still need further assistance may wish to consider other EPA financial assistance programs. (See Section VIII-2 for links to other EPA financial assistance programs.)

Implementation Category Eligibility Requirements

Applicants who wish to apply for the Implementation Category should be committed to exchanging data with other Exchange Network partners through an operational node or node client.

Operational nodes must be able to do *all* of the following:

- Demonstrate *all* nine Exchange Network web methods – authenticate, solicit, query, get status, submit, notify, node ping, download, and node services (see *Exchange Network Node Implementation Guide v.1.0*, April 2003, http://www.exchangenetwork.net, Tool Box);
- Implement the minimum Exchange Network security practices (e.g., including the use of Network Authorization and Authentication Services);
- Submit data to EPA or other Exchange Network partners;
- Receive data from EPA or other Exchange Network partners; and
- Publish data to the Exchange Network by responding to specific data queries from authorized Exchange Network partners.

Node clients must be able to do the following:

- Submit data to EPA or other partners using the Exchange Network;
- Request data from EPA or other partners using the Exchange Network; and
- Receive data from EPA or other partners using the Exchange Network.

Unlike nodes, node clients can *not* publish data on the Exchange Network (i.e., they can not respond to data queries from other Exchange Network partners).

The use of a node or node client will depend on the business needs of the applicant's organization. Some tribes may wish to use a node client, rather than a node, if the capabilities of an operational node are not needed at this time. However, EPA encourages all partners to develop an operational node to realize the full benefits of the Exchange Network.

If applying for an Implementation Category award, a state/territorial applicant must describe in his/her application work plan the current status of node development efforts (if any) and tasks/milestones for implementing a node. (See Appendix E.)

Challenge Category Eligibility Requirements

Applicants who wish to apply for the Challenge Category must work collaboratively with other Exchange Network partners. These partners could be other agencies/departments within the same state, territory, or tribe; or agencies/departments in other states, territories, or tribes. EPA program or regional offices, contractors, or other individuals within the applicant's agency/department should *not* be listed as formal project partners, even though EPA may have significant involvement in the project if the award is issued as a cooperative agreement. The application must be submitted by a single lead organization, and the work plan must clearly indicate the roles and responsibilities of each project participant and how the funds will be distributed by the lead organization if an award is issued. If an award is issued, the lead organization must assume full responsibility for overseeing the project and for distributing agreed-upon funds to the other project partners.

IV. Application and Submission Information

IV-1. Address to Request Application Package

This document is available on the Exchange Network Grant Program website, http://www.epa.gov/Networkg. The required application forms are available from EPA's Office of Grants and Debarment at http://www.epa.gov/ogd/AppKit/application.htm. Applicants who are unable to download the forms from this Web site may contact Rebecca Moser at (202) 566-1679 to request copies of the application forms by fax.

IV-2. Content and Form of Application Submission

The following application materials are *required* and must be submitted in the application package:

- Number of Copies: Original plus two copies
- Cover Letter
- Standard Form (SF) 424, Application for Federal Assistance – with original signature and including the following:
- SF-424A, Budget Information for Non-Construction Programs
- SF-424B, Assurances for Non-Construction Programs
- Certification Regarding Lobbying, if the application is for over $100,000
- SF-LLL, Disclosure of Lobbying Activities, if the applicant's organization is involved in lobbying
- EPA Form 4700-4, Pre-Award Compliance Review Report for All Applicants Requesting Federal Financial Assistance
- EPA Form 5700-54, Key Contacts Form
- Work Plan
- Detailed Itemized Budget
- Copy of Negotiated Indirect Cost Rate Agreement (if indirect costs are included in the project budget)
- Biographical Sketches for the Project Manager(s)
- One Self-Addressed Envelope, if the applicant would like to be notified when EPA receives the application

A separate Quality Assurance Narrative Statement is not required; however, applicants should discuss in their work plans how they will ensure the high quality of their proposed projects. Appendix D provides general guidance on quality assurance for Exchange Network projects. Appendix E outlines the format for the cover letter and work plan and provides more detailed application instructions.

IV-3. Submission Date and Time

The *application package and two copies* must be submitted in hard copy to EPA Headquarters and postmarked no later January 15, 2005 (i.e., midnight, applicant's local time).

IV-4. Intergovernmental Review

This funding opportunity is *not* subject to Executive Order (EO) 12372, "Intergovernmental Review of Federal Programs." (EO 12372 asks Federal agencies to rely on state and local processes for consulting with state and local government officials who would be directly affected by proposed federal assistance or who would provide non-federal funds for the proposed activities.)

IV-5. Funding Restrictions

Applicants may use funding from the FY 2005 Exchange Network Grant Program for costs associated with personnel salaries and fringe benefits, travel, equipment, supplies,

contractual costs, in-kind services provided by EPA, and indirect costs. Applicants may *not* use funding from the FY 2005 Exchange Network Grant Program for construction costs or foreign travel.

Operations and Maintenance: Proposed projects should generally focus on Exchange Network planning, development, and implementation activities, rather than on operations and maintenance (O&M). However, it may be appropriate to include some O&M costs in the proposed project budget, such as the O&M costs associated with making the transition from a legacy information system to a modernized system or with enhancing an information system to accommodate a new Exchange Network data flow. O&M costs should *not* account for a major portion the proposed budget.

Workshops and Conferences: Applicants may propose to conduct workshops/conferences, but such workshops/conferences must be initiated, advertised, and conducted for the benefit of the grantee and other state/tribal/territorial/local representatives or public participants. Such events may not be conducted primarily for EPA's benefit. If the applicant expects to receive any program income (e.g., from collecting registration fees), then the anticipated program income must be included in the applicant's budget. Program income is allowable, but it must either be used to augment funding to support the project objectives, finance non-Federal portions of the project, or reduce the total allowable project costs.

Pre-Award Costs: Applicants may request funds to cover pre-award costs that are incurred 90 days or less before the award date. If EPA determines that the requested pre-award costs comply with the OMB Circular A-87 (*Cost Principles for State, Local, and Indian Tribal Governments*, http://www.whitehouse.gov/omb/circulars/a087/a87_2004.html), and that the costs are justified as allocable to the project, then these costs may be included as allowable expenditures at the time that the assistance award document is prepared. However, if for any reason, EPA does not fund the application or the amount of the award is less than the applicant anticipated, then EPA is under no obligation to reimburse the applicant for these costs. Thus, applicants incur pre-award costs at their own risk.

IV-6. Other Submission Requirements

Question-and-Answer Teleconference
EPA has tentatively scheduled a question-and-answer teleconference for interested applicants on Monday, December 6, 2004, from 2:00 to 4:00 p.m. Eastern Time. The teleconference number for this call is 1-866-299-3188, conference code 202-566-1679. Applicants are *not required* to participate in this call, but they may wish to do so if they have questions about the FY 2005 grant program or the application procedures. Applicants should submit any questions they have to Rebecca Moser via email (moser.rebecca@epa.gov) by November 19, 2004, so EPA can develop responses to the questions before the teleconference.

Submission of Required Hard-Copy Applications
Applicants must submit an *application package plus two copies* in hard copy to Rebecca Moser, Exchange Network Grant Program Manager, by the application deadline (midnight, January 15, 2005, applicant's local time). *EPA recommends the use of overnight mail delivery services to avoid any unnecessary processing delays.* Applicants should send their applications to one of the following addresses:

Postal Mail Deliveries:
Rebecca Moser
U.S. Environmental Protection Agency
Office of Environmental Information
Office of Information Collection
1200 Pennsylvania Ave., NW, Mail Code 2823-T
Washington, DC 20460

Overnight Mail Deliveries:
Rebecca Moser
U.S. Environmental Protection Agency
Office of Environmental Information
Office of Information Collection
1301 Constitution Avenue, NW, 6th Floor, #6143-K
Washington, DC 20460
Phone: (202) 566-1679

Submission of Optional Electronic Applications
Applicants are encouraged, but not required, to send an electronic copy of the application package to Rebecca Moser (moser.rebecca@epa.gov) with a copy to the EPA Regional Coordinator (Section VII). A hard-copy application package, plus two copies, must still be submitted to EPA, even if the applicant submits an electronic version.

EPA Handling of Late or Ineligible Applications
EPA will not review or fund any applications that are postmarked after January 15, 2005, or that are received from ineligible applicants. In addition, EPA will not return late or ineligible applications to the submitters.

V. Application Review Information

V-1. Criteria

Each application will be evaluated using the criteria outlined below and given a numerical score. Both the general evaluation criteria and the category-specific evaluation criteria will be used to develop the numerical score for each proposal. These scores will serve as a "starting point" for deliberations by the EPA Review Panel in conducting the competitive review of applications within each assistance category (i.e., Readiness,

Implementation, or Challenge). Tribal applications for each category will be evaluated separately from state/territorial applications for the same category. See Section V-2 for more details on the review and selection process.

General Evaluation Criteria for All Assistance Categories (maximum of 35 points)
All applications will be evaluated based on the following general criteria:

- Will the proposed project advance the development and use of the Exchange Network and build on the successes and lessons learned by other Exchange Network participants? *(5 points)*
  Examples might include using previously developed XML schema, learning from other Exchange Network partners' node development efforts, or implementing a data flow that has been successfully demonstrated by other Exchange Network partners in other parts of the country.
- Does the applicant's work plan include clear goals and milestones covering the two-year project period? *(5 points)*
- Does the applicant's work plan discuss a clear approach to ensure the high quality and success of the project? *(5 points)*
- Does the applicant's work plan articulate the benefits of the project (e.g., in terms of time, cost, reductions in information reporting burdens, improved data quality, improved access to previously unavailable data, enhanced ability to integrate and analyze data from various sources, improved understanding of environmentally-related human health problems, etc.)? *(5 points)*
- Does the applicant's work plan include a milestone(s) to publish project accomplishments and success stories, lessons learned, and or related project information of potential interest to other Exchange Network partners on the Exchange Network website (http://www.exchangenetwork.net)? *(5 points)*
- Did the applicant receive a prior Exchange Network grant(s)? If so, did the applicant comply with the grant's programmatic conditions and achieve the project goals/milestones? *(up to 10 points: a) 5 points if the applicant did not receive a previous Exchange Network grant; b) 0 points if the applicant received a previous grant, but did not comply with the grant's programmatic conditions nor achieve stated goals/milestones; c) 5 points if the applicant received a previous grant and complied with the grant's programmatic conditions; d) 5 points if the applicant received a previous grant and achieved the stated goals/milestones; or e) 10 points if the applicant received a previous grant, complied with the grant's programmatic conditions, and achieved the stated goals/milestones.)*
  For example, if the applicant received an FY 2002 Exchange Network award and the primary project goal was to develop an operational Exchange Network node by the end of the two-year project period (e.g., fall of 2004), then the applicant could receive 5 points if the node is now operational.

Readiness Category Evaluation Criteria (maximum of 65 points)
Readiness Category applications will be evaluated based on whether they include one or more of the following activities:

- Development, testing, and implementation of an Exchange Network node (for states, territories, and tribes) *(40 points)*

- Implementation of a node client (for tribes only) *(30 points)*
- Development of other IT hardware/software enhancements that will facilitate participation in the Exchange Network *(20 points)*
- Development of Web services, security enhancements, or data quality checking/validation tools that will enhance the utility of the Exchange Network *(10 points)*

Implementation Category Evaluation Criteria (maximum of 65 points)
Implementation Category applications will be evaluated based on whether they include one or more of the following activities:

- Implement one or more of the following data flows using the Exchange Network: AFS, AQS, e-DMR, FRS, ICTS, ICIS-NPDES, NEI, P2, RCRAInfo, SDWIS, SWP, TRIS, UIC, or Water Quality Monitoring *(20 points/data flow)*
- Implement other Exchange Network data flows *(10 points/data flow)*
- Use the Exchange Network to integrate data from different sources and share the results of these data integration efforts with other Exchange Network partners *(10 points)*
- Develop a data standard through the EDSC process for use by Exchange Network partners *(10 points)*
- Develop an XML schema for use by Exchange Network partners, incorporating EDSC-approved data standards if applicable *(10 points)*
- Use an approved data standard to link previously disconnected data assets *(5 points)*
- Obtain, analyze, integrate, and provide access to geospatial data using the Exchange Network *(10 points)*
- Use data, published as Web services by other Exchange Network partners, to satisfy an identified business need *(10 points)*
- Publish data as Web services to enhance the ability of Exchange Network partners to analyze, integrate, and use those data. These Web services can be selected from the listing of Web services posted on the Exchange Network Web site or developed by the grantee *(10 points)*

Challenge Category Evaluation Criteria (maximum of 65 points)
Challenge Category applications will be evaluated based on whether they include one or more of the following activities:

- Implement one or more of the following data flows among multiple partners using the Exchange Network: AFS, AQS, e-DMR, FRS, ICTS, ICIS-NPDES, NEI, P2, RCRAInfo, SDWIS, SWP, TRIS, UIC, or Water Quality Monitoring *(20 points/data flow)*
- Implement other Exchange Network data flows among multiple *partners (*20 points/data flow)
- Use the Exchange Network to integrate data from different sources and share integrated data among multiple partners *(15 points)*
- Develop a data standard through the EDSC process for use by Exchange Network partners *(10 points)*
- Develop an XML schema for use by Exchange Network partners, incorporating EDSC-approved data standards if applicable *(10 points)*

- Use an approved data standard to link previously disconnected data assets *(5 points)*
- Obtain, analyze, integrate, and provide access to geospatial data using the Exchange Network *(10 points)*
- Develop applications that use data available through the Exchange Network (via Web services) to enhance decision-making, data analyses, risk assessments, and environmental monitoring *(10 points)*
- Use data, published as Web services by other Exchange Network partners, to satisfy an identified business need *(10 points)*
- Publish data as Web services to enhance the ability of Exchange Network partners to analyze, integrate, and use those data. These Web services can be selected from the listing of Web services posted on the Exchange Network website or developed by the grantee *(10 points)*
- Use the Exchange Network to exchange data that have not been previously available *(20 points)*
- Use the Exchange Network to exchange data needed to address regional environmental problems *(20 points)*
- Enhance information security controls, such as identity proofing *(10 points)*

Other Evaluation Criteria (qualitative criteria)
The EPA Review Panel may also consider the following factors when evaluating the most favorably reviewed applications together and deciding which of them to recommend for funding:
- Geographic distribution
- Balance among data flow activities
- EPA program offices' ability and/or readiness to support the proposed activities
- EPA's ability to provide requested in-kind services
- Potential for other Exchange Network partners to build on the results of the proposed project, if successful

V-2. Review and Selection Process

The Exchange Network Grant Program is a competitive assistance program. EPA will review all of the applications it receives from eligible applicants that are postmarked by January 15, 2005 (i.e., midnight, applicant's local time). EPA will not review or fund any applications that are postmarked after January 15, 2005, or submitted by ineligible applicants.

Each application will be evaluated using the criteria outlined in Section V-1 of this guidance and given a numerical score. The applications will then be evaluated by a Review Panel composed of representatives from EPA headquarters and regional offices. The numerical scores given to the applications provide a starting point for the Review Panel's discussions. The applications will be evaluated competitively against other applications within the same assistance category – Readiness, Implementation, or Challenge. Tribal applications for each category will be evaluated separately from state/territorial applications. Once the applications within each category have been evaluated, the Review Panel may look at all of the applications that received a favorable

review and consider other factors (e.g., geographic distribution, balance among data flows, etc.) as outlined in Section V-1 when developing its funding recommendations for consideration by EPA's Office of Environmental Information (OEI). OEI may ask applicants whose applications received a favorable review to modify their work plans or budgets before making final funding recommendations.

V-3. Anticipated Announcement and Award Dates

EPA plans to send written notifications to applicants in May 2005 (via postal mail) indicating whether their respective applications have been recommended for funding. EPA plans to issue the awards in August/September 2005.

VI. Award Administration Information

VI-1. Award Notices

EPA will send a letter to each applicant in May 2005 indicating whether his/her application has been recommended for funding. This letter is not authorization to begin performance of the project. EPA plans to issue the awards in August/September 2005. The written Grant Agreement or Cooperative Agreement issued by EPA's Grants Administration Division (GAD) is the authorizing document. The agreement will be mailed to the grantee by postal mail. The original must be signed, dated, and returned to the GAD within three calendar weeks after it is received by the grantee or within any extension of time as may be granted by EPA.

VI-2. Administration and National Policy Requirements

Each Grant Agreement or Cooperative Agreement will include a set of Administrative Conditions and Programmatic Conditions. Examples and excerpts of some of the conditions are outlined below. *Not all of the conditions described below would necessarily apply to all award recipients.*

Electronic Method of Payment: By accepting this agreement for the electronic method of payment through the Automated Clearing House (ACH) network using the EPA-ACH payment system, the recipient agrees to do the following: a) request funds based on the recipient's immediate disbursement requirements by presenting an EPA-ACH Payment Request to the EPA Servicing Finance Office; b) provide timely reporting of cash disbursements and balances in accordance with the EPA-ACH Payment System Recipient's Manual; and c) impose the same standards of timing and reporting on sub-recipients, if any. Failure on the part of the recipient to comply with the above conditions may cause the recipient to be placed on the reimbursement payment method.

Financial Status Report: As required by EPA regulations, the recipient agrees to submit a final Financial Status Report (FSR) (Standard Form 269) within 90 days after

the end of the budget period to EPA's Las Vegas Financial Management Center. When the recipient submits a final FSR, the recipient will make an adjustment for the amount of Federal funds, if any, received in excess of the EPA share of the reported total budget period costs.

Payment to Consultants: EPA participation in the salary rate (excluding overhead) paid to individual consultants retained by recipients or by a recipient's contractors or subcontractors shall be limited to the maximum daily rate for Level IV of the Executive Schedule (formerly GS-18), to be adjusted annually. This limit applies to consultation services of designated individuals with specialized skills who are paid at a daily or hourly rate. As of January 1, 2004, the limit is $524.72 per day and $65.59 per hour. This rate does not include transportation and subsistence costs for travel performed and the grantee will pay these costs in accordance with his/her organization's normal travel reimbursement practices.

Indirect Cost Rates: If the recipient does not have a previously established indirect cost rate, the recipient must agree to prepare an indirect cost rate proposal and/or cost allocation plan in accordance with OMB Circular A-87, *Cost Principles for State, Local, and Indian Tribal Governments*. If EPA is the cognizant federal agency, the state recipient must submit its indirect cost rate proposal within six months after the close of the governmental unit's fiscal year to EPA's Financial Analysis and Rate Negotiation Service Center, Office of Acquisition Management, 1200 Pennsylvania Ave., NW, MC 3802R, Washington, DC 20460.

Cooperative Agreements: This award is being issued as a Cooperative Agreement, and EPA anticipates having substantial involvement in the project. This involvement may involve one or more of the following:

- intense monitoring by EPA;
- joint operational involvement, participation, and/or collaboration between EPA and the grantee;
- EPA prior review or approval of project phases or the substantive provisions of proposed contracts found within the scope of the agreement;
- EPA approval of key recipient personnel assigned to the project; or
- EPA collaboration regarding the scope of work, organizational structure, staffing, mode of operation and other management processes (i.e., assuming the principal purpose is not to acquire goods or services for the government).

The grantee must work closely with the EPA Regional Project Officer and other EPA personnel, to the extent deemed appropriate by EPA, during the performance of the project.

In-Kind Services: This assistance agreement involves the provision of in-kind services by EPA in lieu of direct funding for all or part of the award. The delivery of these in-kind services must be directed and managed by EPA. The grantee may not direct the activities of an EPA contractor or a contractor whose services EPA has obtained through an interagency agreement with another Federal agency. EPA's involvement may include, but is not necessarily limited to, developing Statements of Work, providing technical

direction to the contractor, reviewing/approving deliverables, and reviewing/approving progress reports and invoices. In order to ensure that the in-kind services provided support the grantee's Work Plan, the grantee must communicate regularly with the EPA Regional Project Officer and other EPA personnel as appropriate.

Pre-Award Costs: Upon reviewing the applicant's request for pre-award costs, EPA has determined that requested pre-award costs comply with OMB Circular A-87, *Cost Principles for State, Local, and Indian Tribal Governments,* and that the costs are justified as allocable to the project. These costs are included as allowable expenditures under the assistance agreement, at the time the assistance award document is prepared. If for any reason, EPA does not fund the applicant's proposed project or the amount of the award is less than anticipated, then EPA is under no obligation to reimburse the applicant or grantee for these costs. Applicants/grantees incur pre-award costs at their own risk. These are just some examples of administrative and programmatic conditions that could be included in Exchange Network Assistance Agreements.

Applicants who are interested in obtaining a more complete list of typical administrative and programmatic terms and conditions may contact Rebecca Moser, the Exchange Network Grant Program Manager (Section VII).

VI-3. Reporting

Semi-Annual Performance Progress Reports
Reporting is an important obligation that award recipients agree to undertake when they sign an Assistance Agreement. Both EPA and the grantees are accountable to Congress and to the public for the proper and effective use of Exchange Network assistance funds. EPA expects all award recipients to submit complete and timely reports, and it may consider compliance with reporting requirements when evaluating applications for financial assistance.

Recipients of Exchange Network Grants are required to submit semi-annual performance progress reports. These progress reports must be submitted within one month of the end of the reporting period. The reporting periods are from October through March (report due April 30) and from April through September (report due October 31). The first reporting period for the FY 2005 Exchange Network grants will be from the start of the project period through March 31, 2006, and the first semi-annual report will be due to EPA on April 30, 2006.

The semiannual reports must be submitted electronically to the Regional Project Officer (as identified on the Grant Agreement), with copies to the Regional Coordinator and to Rebecca Moser, the Exchange Network Grant Program Manager. (See Section VII for contact information.)
Progress reports must include the following:

- An outline of the proposed project goals, tasks, target completion dates, and accomplishments/deliverables for the reporting period;
- Any significant problems or delays and the steps that are being taken to address them;

- Technical or administrative assistance needed from EPA;
- Summary of the funds expended during the reporting period, the total funds expended to date, and the funds remaining (unless the Exchange Network assistance award was incorporated into a PPG or CG).

Final Performance Progress Report
Award recipients must agree to submit a final performance progress report to the EPA Project Officer within 90 days after the expiration or termination of the approved project period. The final report must document project activities over the entire project period and shall describe the recipient's achievement with respect to stated project purposes and objectives.

Final Financial Status Report
As indicated above (Section VII – 2), award recipients must submit a final Financial Status Report (FSR) to EPA within 90 days after the end of the project budget period.

VII. Agency Contacts

General information about the Exchange Network Grant Program and past awards is available at http://www.epa.gov/Networkg. The primary EPA Headquarters point of contact is Rebecca Moser, the Exchange Network Grant Program Manager. Her contact information is as follows: Office of Information Collection, Office of Environmental Information, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Mail Code 2823-T, Washington, DC 20460; phone, 202 -566-1679; email, moser.rebecca@epa.gov.

EPA Regional Coordinators for the Exchange Network Grant Program are listed below. In some, but not all cases, these individuals also serve as Regional Project Officers for the Exchange Network grants/cooperative agreements, once the awards are issued.

EPA Regional Coordinators for the FY 2005 Exchange Network Grant Program				
EPA Region	**Coordinator**	**Address**	**Phone**	**Email**
Region 1	Ken Blumberg	U.S. EPA, 1 Congress Street, Suite 1100, Mail Code MIR, Boston, MA 02114	(617) 918-1084	blumberg.ken@epa.gov
Region 2	Robert Simpson	U.S. EPA, 290 Broadway, Mail Code 20PMIS, New York, NY 10007-1866	(212) 637-3335	simpson.robert@epa.gov
Region 3	Joseph Kunz	U.S. EPA, 1650 Arch Street, Mail Code 3PM50, Philadelphia, PA 19103	(215) 814-2116	kunz.joseph@epa.gov
Region 4	Richard Nawyn	U.S. EPA, 61 Forsyth Street, Mail Code OPM/1MB, Atlanta, GA 30303	(404) 562-8320	nawyn.richard@epa.gov
Region 5	Noel Kohl	U.S. EPA, Resource Management Division, 77 W. Jackson Boulevard, Mail Code MG-9J, Chicago, IL 60604	(312) 886-6224	kohl.noel@epa. gov
Region 6	Jim Poindexter	U.S. EPA, 1445 Ross Ave., Suite 1200, Mail Code 6MDII, Dallas, TX 75202	(214) 665-8586	poindexter.jim@epa.gov
Region 7	Maryane Tremaine	U.S. EPA, 901 N. Fifth Street, Mail Code PLMG/IRMB, Kansas City, KS 66101	(913) 551-7430	tremaine.maryane@epa.gov
Region 8	Josie Lopez	U.S. EPA, 999 18th Street, Suite 500, Mail Code 8P-5A, Denver, CO 80202-2466	(303) 312-7079	lopez.josie@epa. gov
Region 9	Patricia Eklund	U.S. EPA, 75 Hawthorne Street, Mail Stop PMD-1, San Francisco, CA 94105	(415) 972-3738	eklund.patricia@epa.gov
Region 10	Burney Hill	U.S. EPA, 1200 6th Avenue, Mail Code EMI-095, Seattle, WA 98101	(206) 553-1761	hill.burney@epa. gov

A listing of U.S. states/territories and the corresponding EPA regional offices is available at http://www.epa.gov/epahome/whereyoulive.htm#regiontext.

VIII. Other Information

VIII-1. Exchange Network References

The following Web sites may be of interest to grant applicants and other Exchange Network partners:

- Central Data Exchange (CDX): http://www.epa.gov/cdx
  This site provides information about CDX, which is EPA's node on the Exchange Network.
- Environmental Data Registry: http://www.epa.gov/edr
  This site provides information on XML schema and data standards and a link to the XML Registry.
- Exchange Network: http://www.exchangenetwork.net
  Click on "Tool Box" for guidance on node specifications, security guidelines, data flow configurations, and XML schema development. Click on "Registry" for a link to the XML Registry.
- Exchange Network Grant Program: http://www.epa.gov/Networkg
  See state and tribal activities for examples of previous Exchange Network activities.
- State/EPA Information Management Workgroup, *Implementation Plan for the National Environmental Information Exchange Network*, February 12, 2002, http://www.sso.org/ecos/eie/Iplan_Feb2002.PDF
- State/EPA Network Blueprint Team, *Blueprint for a National Environmental Information Exchange Network*, report to the State/EPA Information Management Work Group, October 20, 2000, http://www.epa.gov/oei/imwg/files/Blueprint_Report.pdf

VIII-2. Other EPA Financial Assistance Programs

EPA offers a number of other financial assistance programs at various times of the year that may be of interest to states, territories, tribes, and tribal consortia. General information about financial assistance programs can be found on the Office of Grants and Debarment website at http://www.epa.gov/ogd.

Additional information can be found at the following websites:

- American Indian Environmental Office (AIEO): http://www.epa.gov/indian/tgrant.htm
- Office of Air and Radiation (OAR): http://www.epa.gov/air/grants_funding.html
- Office of Enforcement and Compliance (OECA): http://www.epa.gov/Compliance/planning/state/grants/stag/index.html. In November 2004, OECA's Office of Compliance (OC) plans to publish a State and Tribal Assistance Grant (STAG) solicitation notice inviting proposals that relate to the modernization of the Permit Compliance System (PCS). Examples of possible projects include activities to support the data conversion and migration of state/tribal data from the legacy PCS to the modernized ICIS-NPDES, data clean-up, and the entry and update of data required in ICIS-NPDES for minor facilities located in

states/tribes. For more information about this funding opportunity, contact David Piantanida, the OECA/OC STAG Program Director, at (202) 564-8318.

- Office of Prevention, Pesticides, and Toxic Substances (OPPTS)/Office of Prevention, Pesticides, and Toxic Substances (OPPT): http://www.epa.gov/oppt/p2home/grants/ppis/ppis.htm
- Office of Solid Waste and Emergency Response (OSWER)/Brownfields Cleanup and Redevelopment: http://www.epa.gov/brownfields/pilot.htm
- Office of Water (OW): http://www.epa.gov/water/funding.html

Appendix A

Definitions

Environmental Information Exchange Network
The Exchange Network is an Internet and standards-based information network among EPA and its partners in states, tribes, and territories. It is designed to help integrate information, provide secure real-time access to environmental information, and support the electronic storage and collection of high-quality data and information. The Exchange Network provides a more efficient way of exchanging environmental information at all levels of government. It significantly improves the way EPA and its state/territorial/tribal partners send and receive information.

Central Data Exchange (CDX)
EPA's CDX is the point of entry on the Environmental Information Exchange Network (Exchange Network) for environmental data submissions to the Agency. CDX provides the capability for submitters to access their data through the use of web services. CDX enables EPA and participating program offices to work with stakeholders - including state, tribal and local governments and regulated industries - to enable streamlined, electronic submission of data via the Internet.

Data Standard
A data standard depicts the required content and format in which particular types of data are to be presented and exchanged. Exchange Network partners must generally use data standards that have been approved by the Environmental Data Standards Council (EDSC). A list of EDSC-approved data standards is available on the Internet at http://www.envdatastandards.net. Information on EPA's implementation of EDSC-approved data standards is available on the Environmental Data Registry Web site, http://www.epa.gov/edr.

Data Element
A data element is the smallest unit of information stored in and exchanged among Exchange Network partners' information systems. Examples of data elements are the facility name, DUNS number, and inspection date.

Data Exchange Template
A data exchange template is a standardized format that identifies the types of information required/allowed in a particular document or data exchange. Data exchange templates contain no data, but they define the format for exchange according to data standards and trading partner agreements.

Extensible Markup Language (XML)
Extensible Markup Language (XML) is a flexible language for creating common information formats and sharing both the format and content of data over the Internet and elsewhere. XML, a formatting language recommended by the World Wide Web Consortium (W3C). For guidance on the development of XML schema for the Exchange Network or related activities of the Technical Resource Group (TRG), see the Exchange Network website at http://www.exchangenetwork.net.

Extensible Stylesheet Language (XSL)
The Extensible Stylesheet Language (XSL) is a language used to format XML documents. For example, XSL can be used to show how the data in an XML document should be displayed on a Web site.

Extensible Stylesheet Language Transformations (XSLT)
An extension of the Extensible Stylesheet Language (XSL) which describes how to transform an XML document that is structured in a particular way into an XML document with a different structure.

Geographic Information Systems
Geographic Information Systems (GIS) include software and hardware systems that relate and display collected data in terms of geographic or spatial location. GIS systems allow users to collect, manage, and analyze large volumes of geospatial data and metadata. EPA and its partners use GIS systems to conduct complex environmental analyses.

Geospatial Data
Geospatial data are data that identify, depict, or describe the geographic locations, boundaries, or characteristics of the Earth's inhabitants or its natural or human-constructed features. Geospatial data include geographic coordinates (e.g., latitude and longitude) that identify a specific location on the Earth; data that are linked to geographic locations or have a geospatial component (e.g., socio-economic data, land use records and analyses, land surveys, homeland security information, environmental analyses). Geospatial data may be obtained using a variety of approaches and technologies, including things such as surveys, satellite remote sensing, Global Position System (GPS) hand-held devices, and airborne imagery and detection devices.

Geospatial Technologies
Geospatial technologies include the computer hardware and software that are commonly used to collect, import, store, manipulate, analyze, and display digital geospatial data. These technologies include GIS, global positioning systems (GPS), remote sensing, and visualization systems.

Metadata
Metadata is data or information that describes other data. Examples include data which describe how or where the data were collected, whether or not the data comply with agreed-upon data standards, or how the data will be used.

Network Authorization and Authentication Services
Network Authorization and Authentication Services (NAAS) are a set of centralized information security services that Exchange Network partners can use to authenticate and authorize their users. NAAS provides an efficient way for Exchange Network participants to exchange data with many trusted partners, without them each having to authenticate and authorize each user themselves. All NAAS operations are conducted over a Secure Socket Layer (SSL) channel using 128-bit encryption.

Network Quality Assurance Web Services (NQAWS)
The Network Quality Assurance Web Services (NQAWS) are a set of tools built on Web services that support the validation of XML documents for the Exchange Network. NQAWS supports the validation of both XML schema and extended business rules. The schemas must be installed into the quality assurance tool to make the validation service for those schema available to Exchange Network partners. The business rules must also be defined and added to the schematron rule set to make them available to users.

Node
A node is a Web server (hardware with appropriate software) that provides a point for exchanging information over the Internet. Exchange Network nodes can gain access to and transmit information using Web services. In order to achieve interoperability among nodes, all nodes must be set up according to the Exchange Network specifications. Specifications and protocols for building a functioning Exchange Network node are available at http://www.exchangenetwork.net.

Node Client
A node client is an application (software code) that can generate Web service messages using the Exchange Network. A node client can do the following:
- Submit data to EPA or other partners using the Exchange Network;
- Request data from EPA or other partners using the Exchange Network; *and*
- Receive data from EPA or other partners using the Exchange Network.

Unlike nodes, node clients can *not* publish data on the Exchange Network (i.e., they can not respond to data queries from other Exchange Network partners).

Operational Exchange Network Node
An Exchange Network node is *operational* if it meets all of the following criteria:
- Demonstrates *all* nine Exchange Network web methods – authenticate, solicit, query, get status, submit, notify, node ping, download, and node services (see *Exchange Network Node Implementation Guide v.1.0*, April 2003, http://www.exchangenetwork.net, Tool Box);

- Implements the minimum Exchange Network security practices (e.g., including the use of Network Authorization and Authentication Services);
- Submits data to EPA or other Exchange Network partners;
- Receives data from EPA or other Exchange Network partners; and
- Ability to publish data to the Exchange Network by responding to specific data queries from authorized Exchange Network partners.

When developing Exchange Network nodes, applicants should refer to the Node Test Suite on the Exchange Network Web site. (See http://www.exchangenetwork.net and click on "Tool Box.") All Network nodes should pass the interoperability tests on this site. This site also contains technical specifications and protocols, as well as the implementation guidance developed by the Network Steering Board's Node 1.0 Workgroup.

Schema

An XML schema defines the structure of an XML document. An XML schema defines things such as which data elements and attributes can appear in a document; how the data elements relate to one another; whether an element is empty or can include text; which types of data are allowed for specific data elements and attributes; and what the default and fixed values are for elements and attributes. As of October 2003, the following XML schemas are available for use by Exchange Network partners: NEI (Area Non-Road v3, Biogenic v3, On-Road v3, and Point v3), RCRAInfo (Permit, Manifest, Handler, Corrective Action, Compliance Monitoring and Enforcement, and Activity), AQS (Publishing and Submission), and FRS (v2.2 and v. 2.3).

Schematron

A schematron is an open source application that can create an XSLT stylesheet to validate XML documents by combining the XML schema and a file containing a set of business rules. The XSLT stylesheet is then used to validate the instance document and return a list of errors.

Web Form

A standard interface that can be downloaded from the Internet. A Web form contains text boxes for a user to enter data. Users can then submit the form (e.g., environmental reports) to the receiver.

Web Services

Web services are automated information services that are conducted over the Internet, using standardized technologies and formats/protocols that simplify the exchange and integration of large amounts of data over the Internet. They make it easier to conduct work across organizations regardless of the types of operating systems, hardware/software, programming languages, and databases that are being used.

Appendix B

Suggested Exchange Network Data Flow Activities

The Exchange Network Grant Program supports a variety of activities, including things such as the acquisition and development of computer hardware/software needed to connect to the Exchange Network; the development of common data standards, formats, and trading partner agreements for sharing data over the Exchange Network; and the planning, development, and implementation of collaborative, innovative uses of the Exchange Network. It also supports the standardization, exchange, and integration of geospatial information to address environmental, natural resource, and related human-health issues.

The success of the Exchange Network will ultimately depend on how EPA and its partners use the data and information that are exchanged to enhance decision-making and programmatic operations. EPA encourages all partners to use the Exchange Network to meet their business needs. This could include exchanging data that support national environmental systems, as well as data that support particular state/territorial/tribal needs. This appendix outlines some of the data flow activities that applicants could consider when applying for the FY 2005 Exchange Network Grant Program.

I. Non-National System Data Flows

Applicants could propose to implement data flows that meet specific business needs. Such data flows could be regulatory or voluntary and occur between facilities and states/territories/tribes, among different agencies within a state/territory/tribe, between different states/territories/tribes, or between states/tribes/territories and EPA. These data flows could support environmental decision-making and operations at any level (e.g., federal, regional, state, local), address cross-cutting environmental issues, or support specific state/territorial/tribal environmental programs. An example of such a data flow might be one that supports an environmental performance self-certification program or other performance-based program. Another example of such a data flow might be one that supports regional environmental decisions, programmatic operations, or initiatives.

II. National System Data Flows

Applicants could propose to implement one or more of the following data flows:

- Air Facility System (AFS)
- Air Quality System (AQS)
- Electronic Discharge Monitoring Reports (e-DMR)
- Facility Registry System (FRS)
- Institutional Controls Tracking System (ICTS)

- Integrated Compliance Information System – National Pollutant Discharge Elimination System (ICIS-NPDES)
- National Emissions Inventory (NEI)
- National Pollution Prevention (P2) Results System
- Resource Conservation and Recovery Act Information System (RCRAInfo)
- Safe Drinking Water Information System (SDWIS)
- Source Water Protection (SWP) Data Exchange
- Toxics Release Inventory System (TRIS)
- Underground Injection Control (UIC) Database
- Water Quality Monitoring Data Exchange (STORET)

Each of these national environmental information systems and/or data exchanges is briefly described below, along with related EPA program office information and suggested activities that applicants may wish to consider proposing.

Air Facility System

System Description:
AFS is a mainframe system written in NATURAL and ADABAS that houses EPA's air compliance and enforcement information for stationary sources. (AFS was formerly known as AIRS-AFS, or the Aerometric Information Retrieval System, Air Facility Subsystem.) AFS is scheduled for modernization into ICIS, with activities beginning in FY06 and carrying through to FY07 or FY08. The start date for AFS modernization is dependent upon the finish date of the system currently being modernized, i.e., water legacy systems. Many AFS users have asked for the ability to report via an XML schema. EPA would like to formulate a schema that can be used for reporting to the current structure of AFS, using the Universal Interface as a conversion program. The formulation of the schema can be used to hasten the modernization effort of AFS.

Air Facility System Office of Enforcement and Compliance Assurance Office of Compliance							
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Incorporate approved data standards into national information system	Ongoing	X	X	X	X	X	X
Form workgroup to formulate the Entity Relationship Diagram for AFS Modernization	FY 2005	X	X				
Begin working with Exchange Network partners to develop an XML schema for AFS and to revise the state interface tool (i.e., the Universal Interface, a software product developed by EPA for use by states to facilitate their reporting to AFS)	FY 2005 (2nd half)		X				

Air Facility System Office of Enforcement and Compliance Assurance Office of Compliance							
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Create a workgroup to develop an XML schema for AFS	FY 2006		X	X			
Begin modernization efforts to merge AFS with ICIS.	FY 2007				X	X	X
Revise the XML schema to accommodate the modernized structure	FY 2008					X	X
Begin making arrangements to receive AFS reporting data through CDX	FY 2008					X	X

Suggested Activities for Exchange Network Partners:

Air Facility System Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Participate in a workgroup to develop the XML schema for AFS	FY 2006	X			
Develop modifications to the state AFS interface tool (i.e., Universal Interface)	FY 2008		X	X	X

Air Quality System

System Description:
AQS is a national database that contains ambient air quality monitoring data collected by state, tribal, and local governments. This information is used to determine compliance with clean air standards, assess the nature of air pollution problems in North America, and assess the exposure of humans to toxic and other airborne pollutants. AQS currently receives data from all 50 states plus several territories, about 30 local agencies, and many tribes. The data volume that flows into AQS is large, with thousands of submissions per year containing about 75,000,000 discrete data points.

Status and Plans:

- Flat File: The transfer of AQS flat files via CDX began in July 2003.
- XML Schema: The XML schema for AQS submissions will be available by the fall of 2004 for voluntary use by agencies to exchange data with EPA or other agencies. The AQS schema will be augmented with structures for containing AQS outputs (the "publishing" schema) as well as AQS inputs (the "submission" schema) on an ongoing basis.
- CDX exchanges of XML data: Subsequent to schema development, EPA will develop the capability to receive and process AQS XML data. This ability will be implemented in phases from October through December 2004.
- Node-to-node data exchanges: It is anticipated that AQS will be capable of accepting submissions via node-to-node transfers by the spring of 2005.
- Other Activities: In late 2004, EPA expects to deploy Web services via CDX that support limited real-time stakeholder queries of selected AQS data.

Air Quality System Office of Air and Radiation							
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Develop XML schema for AQS submissions	FY 2005 (1st half)	X					
Accept AQS submissions in XML format through CDX and continue to support AQS schema enhancements	FY 2005 (1st half) then ongoing	X	X	X	X	X	X
Test node-to-node data exchanges	FY 2005 (2nd half)		X				
Support operational node-to-node data exchanges	FY 2005 (2nd half) the ongoing		X	X	X	X	X
Publication and test of web services for limited data retrieval from AQS in XML	FY 2005 (1st half)	X					
Support of web services for data retrieval from AQS and continued development of publishing schema	Ongoing		X	X	X	X	X

Suggested Activities for Exchange Network Partners:

The primary goals of AQS-related Exchange Network activities include the following:

- increase the timeliness of data submissions,
- remove barriers keeping data that have already been collected from getting into AQS, and
- increase the opportunities for collaborative analysis of air quality data.

The timeliness of data can be increased by automating more of the existing steps in the transfer of data from the collecting instrument to the collecting agency and from there to AQS. EPA also believes that there are large backlogs of data, particularly toxicant and visibility, that have been collected but not put in a suitable electronic format and submitted to EPA. New processes or tools addressed at eliminating and alleviating this backlog would be of great benefit. Finally, as more and more air quality data are available, consistency in analytical approaches is essential if control agencies, regional planning bodies, and scientists are to collaborate. Making existing analytical tools at an agency available via a Web service using the AQS XML format as input is of interest. Examples of analytical tools include trends statistics, correlation and autocorrelation results, trajectory analysis, deterministic models, and heuristic models. Any tools provided must be made available within the public domain.

Specific examples of projects of interest to EPA include, but are not limited to, the following.

- Develop node-to-node data transfer flows that use the AQS XML schema, particularly for submitting data to AQS. The Exchange Network node-to-node concept makes more timely submissions possible. AQS has quarterly submission deadlines that are usually, but not always, met. EPA's goal is to have one-hundred percent deadline compliance. Any manual steps in the process of getting data from the monitors where it is collected to AQS cause delays. Some examples of delays are the requirement for some atmospheric samples to be sent to laboratories for analysis, or for internal review processes at agencies. Projects addressing how to make use of XML formats and transfer mechanisms to speed submissions are highly desirable. This includes data flows upstream of AQS relating to all steps involved in getting information from the monitor to the collecting agency's node. That is, through the measurement device (analyzer, chromatograph, etc.), to and from analyzing laboratories, etc.
- Develop procedures that leverage the tools provided by the Exchange Network to increase the quality of data submitted to AQS. For example, perform on-site schema validation of AQS XML transaction sets prior to submitting them to the EPA. This will identify file structure, format, range, and code-list problems prior to data being processed by CDX or AQS. Schema conformity validation performed at an agency can significantly cut down on the amount of erroneous data rejected by AQS, improving data quality.
- Work with EPA to develop Web services and applications that use AQS XML schema to enhance the timeliness, frequency, and/or efficiency of air quality data transmissions to EPA (e.g., possibly including real-time data transmissions).
- If significant air quality data assets are not currently in AQS, develop an approach for using the Exchange Network to allow partners to share the data. For example, if large amounts of non-regulatory data collected by monitoring networks (e.g., visibility, meteorological, or toxicant data) reside at a node site, develop the data flows for sharing these data.

Air Quality System Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Design, develop, and test Exchange Network node	Any time in window	X	X	X	X
Help develop quality assurance additions to XML schema for AQS (error messaging, publishing, etc.) by participating in the Integrated Project Team (IPT)	FY 2006 (1st half)	X			
Submit production AQS data using the Exchange Network node	Any time in window	X	X	X	X
Publish web services for which AQS XML data is an input and an analytical product is the output.	Any time in window	X	X	X	X
Test and implement upstream flows that improve the timeliness or completeness of collected air quality data submissions to AQS	Any time in window	X	X	X	X

Electronic Discharge Monitoring Reports

System Description:
Under the Clean Water Act (CWA), facilities with NPDES permits submit DMRs periodically (normally monthly). EPA Regions and states provide a pre-printed DMR form to facilities. The information on this form has historically been manually typed into EPA's Permit Compliance System (eventually ICIS-NPDES) by EPA and state personnel. Because of the volume and complexity of the data, EPA and the states have not had the resources to put all of the submitted information into the data system – particularly for non-major facilities. A generic e-DMR tool would provide an interface to allow permitted facilities to submit information automatically via a secure, authenticated Internet site. The e-DMR tool will be part of the Exchange Network and could be used by facilities in states that are both direct and non-direct users of ICIS-NPDES.

The e-DMR approach will reduce the burden on states and EPA Regions to manually enter discharge monitoring data, and can save government agencies and the regulated community significant resources. This in turn allows EPA and states to focus more on using the data to manage the NPDES program.

Reliable, comprehensive and up-to-date data systems are a key to EPA's ability to target compliance monitoring at the highest priority facilities and areas and to measure the effectiveness of its enforcement and permitting activities. Knowing more about the pollutants discharged into our nation's water improves the ability of EPA and the states to implement the NPDES program to protect our nation's water.

Status and Plans:
EPA efforts to institute electronic reporting of DMRs date back to 1992, and the final work plan and strategy will continue to evolve as state involvement increases. In the past, the main obstacle to the development of an EPA e-DMR tool was the lack of a legal framework within which to authenticate data entry. However, the Cross Media Electronic Reporting and Recordkeeping Rule (CROMERRR) requirements are expected to provide the necessary guidelines on electronic signature and validation procedures.

As a result, the EPA Office of Enforcement and Compliance Assurance (OECA) is working with OEI to support the development of an e-DMR application that could automate DMR data flows from NPDES-permitted facilities to ICIS-NPDES. A work group, which includes several representatives from states and EPA Regions, is developing a scoping paper to define the functions, requirements and challenges for designing, building and deploying a generic e-DMR tool that states and EPA Regions could easily adapt for their own use. This paper should be completed by early December 2004.

ICIS-NPDES and e-DMR Tool
EPA Office of Enforcement and Compliance Assurance

Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Concept Paper for e-DMR tool complete	FY 2005 (1st half)	X					
Continue ICIS-NPDES Data Migration activities in coordination with EPA Headquarters, Regions, states, and Data Migration Workgroup participants	Ongoing	X	X	X	X	X	X
ICIS-NPDES Software Development	Ongoing	X	X	X	X	X	
ICIS-NPDES Version 1 Release (12 direct entry user states; 7 states approved to implement the NPDES program; 5 not approved to implement NPDES program)	FY 2006 (1st half)			X			
ICIS-NPDES Version 1.5 Release (remaining direct entry user states)	FY 2006 (2nd half)				X		
CDX/state registry, CDX/state functionality testing, and CDX state data verification and acceptance	Ongoing – FY2007 (1st half)	X	X	X	X	X	

ICIS-NPDES and e-DMR Tool EPA Office of Enforcement and Compliance Assurance								
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**						
		FY 2005		**FY 2006**		**FY 2007**		
Start ICIS-NPDES testing of the receipt and processing of state data transmissions from states systems via CDX and the Exchange Network into the new ICIS-NPDES system, including e-DMRs	FY 2007					X	X	
ICIS-NPDES Version 2.0 Release (Remaining Non Direct Entry States (~30)) (XML batch submissions via the Exchange Network), and e-DMRs	FY2007 (2nd half)						X	

Suggested Activities for Exchange Network Partners:

EPA would like to promote the use of eDMRs for all states through the Exchange Network and is now soliciting proposals in two areas.

Area 1 - States that Use (or Will Use) ICIS-NPDES to Manage Their NPDES Program

EPA currently operates the Permit Compliance System (PCS), a legacy system that houses data (including discharge monitoring reports). This system will be replaced by the modernized ICIS-NPDES database starting in fiscal year 2006. Many states use PCS to manage the NPDES program in their state and/or plan to use ICIS-NPDES as to manage the NPDES program when it becomes available (often called "direct users"). States that are planning to use ICIS-NPDES to manage the NPDES program in their state and would like to allow their permitted facilities to submit eDMRs are eligible to apply under this grant category.

Applications should include provisions for building on the successes of Michigan, Illinois, and other states to create an application that works with the Exchange Network and ICIS-NPDES to receive and process electronic DMRs. This should include authentication procedures for permittees, an electronic signature capability that meets legal requirements, and a common Web-based application that can accept and process eDMRs using the Exchange Network and the ICIS-NPDES system. This will require participating states to fully populate all major and minor permit limit and pipe information for facilities eligible to report their eDMRs (though this entry will be done within PCS and ICIS-NPDES). The software product and associated business rules should be a working application that will accept eDMRs from NPDES facilities in all the states participating in this grant program, as well as other states that are part of the Exchange Network. The application should be designed and built so that it can be easily modified to meet the critical unique needs of particular state NPDES programs.

Area 2 - Non-Direct Users or "Batch" Processing States

States that plan to use eDMRs with their own state databases (and then electronically flow the DMR data to ICIS-NPDES) should consider submitting proposals under Area 2. A state applicant should delineate how the grant/cooperative agreement would leverage existing applications (such as Michigan's system) and enhance the ability of the state to flow accurate and complete data for all NDPES facilities over the Exchange Network. Several states may want to collaborate and provide a combined proposal that would create an E-DMR application that could be easily used by multiple states.

e-DMR Tool Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Work plan developed and contractor selected	FY 2006 (1st half)	X			
System Specifications (Detailed Design) defined	FY 2006 (2nd half)		X		
Programming and System Development	FY 2007 (2nd half)			X	X
Testing with pilot facilities	FY 2007 (2nd half)				X

Facility Registry System

System Description:
FRS is a national database of facility identification information. It covers facilities (over 1.4 million unique places, stations, and sites) that are subject to environmental regulations or are of environmental interest. Key identifying information stored in FRS includes facility names, alternate facility names, geographic locations (i.e., street address and latitude/longitude), mailing addresses, points of contact, permit and system identification numbers, industrial codes, and parent organizational structures. All these data elements are standards-based and can be found on the Environmental Data Registry Web site at http://www.epa.gov/edr. FRS receives data from EPA's national environmental information systems and from many state master records, which conform to the FITS2 model (Facility Identification Templates for States 2). The FRS database directly supports EPA's Envirofacts Data Warehouse Web site, the EPA enforcement ECHO Web site, and the Integrated Compliance Information System (ICIS). It is also used by many EPA applications, such as Window to My Environment and

EnviroMapper. More information and documentation about EPA's FRS can be found at http://www.epa.gov/frs.

Status and Plans:
FRS can now support Exchange Network node-to-node exchanges of facility identification data (i.e., using CDX). The preferred XML schema for facility identification data (i.e., as of October 2004, Facility ID 2.3 version) is now available and is currently being used by a number of Exchange Network partners.

Suggested Activities for Exchange Network Partners:
- Map state facility identification database values to the preferred Facility ID XML schema (version 2.3, as of October 2004).
- Begin exchanging state/territorial/tribal facility identification data with FRS via CDX.
- Develop the capability to use the Exchange Network to obtain, use, and integrate facility data from FRS with other state, tribal, and/or local data.

It is important to include accurate geospatial data (e.g., latitude/longitude) when exchanging facility identification data with EPA and other Exchange Network partners. The Facility Identification standard includes facility locational data. Accurate locational data on regulated facilities is particularly important in developing emergency preparedness plans and in addressing potential threats to homeland security.

Facility Registry System
Suggested Activities for Exchange Network Partners

Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Incorporate approved data standards into state/territorial/tribal information system	Variable (data standards available)	X	X	X	X
Map state/territorial/tribal information system data to the XML schema	Variable (XML schema available)	X	X	X	X
Test node-to-node FRS data flows	Variable (EPA testing available)	X	X	X	X
Submit Facility Identification data to EPA and/or other partners	Variable (EPA now receiving node-to-node FRS data submissions)	X	X	X	X
Improve the quality of locational data for facilities/sites/stations	Ongoing	X	X	X	X
Use FRS to assist states that are just beginning to integrate their data	Ongoing	X	X	X	X

Institutional Controls Tracking System

System Description:
Institutional controls (ICs) are non-engineered instruments such as administrative or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use. ICs are an important component of federal, state, tribal, local government as well as industry lead cleanups. ICs help to minimize the potential for exposure to contaminants and protect the integrity of a remedy. The unique challenge that ICs present is that they are often implemented, monitored and enforced by different parties during the cleanup. Also, these different entities often have overlapping implementation, monitoring and enforcement responsibilities.

Status and Plans:
Implementing ICs at contaminated sites is a common and ever-increasing practice across both cleanup programs and across agencies. To ensure the long-term durability, reliability, and effectiveness of ICs throughout their life-cycle, proper management and tracking of IC information must occur. The need to track ICs using IC management systems and tools has prompted the development of an IC data standard necessary to transfer this information consistently between parties.

The EDSC seeks to promote efficient sharing of environmental information between EPA, State, and Tribal partners through the development of data standards. The IC standard defines the elements required for describing IC information. It provides information about the implementation, monitoring, enforcement, and termination of instruments (via the IC event) as well as the objectives they meet, associated locations, affiliates and their roles/responsibilities in the IC, cleanup actions (via the IC event), technologies, and the documentation related to each of the aforementioned subsets of data. This IC standard is applicable to:

- cataloging and exchanging information about IC instruments, IC objectives, locations, and engineering controls;
- IC instrument, IC objective, location, and engineering control datasets and dataset interchange; and
- XML schemas relating to transferring/cataloging data related to IC instruments, IC objectives, locations, and engineering controls.

This IC standard defines:

- data elements that describe IC instruments, IC objectives, locations, and engineering controls; and
- ancillary information that may be needed to accompany IC data. Though this EDSC standard is applicable to digital data, its principles can be extended to other forms of data such as textual documents.

Institutional Controls Tracking System Office of Solid Waste and Emergency Response Office of Superfund Remediation and Technology Innovation							
		Planned Activities					
		FY 2005		FY 2006		FY 2007	
Finalize National IC Data Standard, XML Schema and XML tags	FY 2005 1nd half	X					
Finalize ICTS CDX File Transfer and Web-based data entry	FY 2005 (1st half)	X					
Finalize ICTS CDX Node for data publishing	FY 2005 (1st half)	X					
Finalize ICTS Ad-hoc query capabililty for back-end database	FY 2005 (1st half)	X					
Finalize Business Process Approval Proceedures	FY 2005 (1st half)	X					
Establish Trading Parter Agreements	FY 2005 (2nd half)		X	X	X	X	X
Test node-to-node (State-to-EPA) data exchanges	FY 2005 (1st half)	X	X				
Support operational node-to-node (State-to-EPA) data exchanges	FY 2005 (2nd half and ongoing)		X	X	X	X	X

Suggested Activities for Exchange Network Partners:
Applicants are encouraged to submit applications for assistance in incorporating and/or mapping to the IC standard/schema into their existing systems, negotiating Trading Partner Agreements, developing node code and adjustments specific to IC data flows, completing XML file transfers, data entry via web-services, and full node deployment for IC data flows. EPA also encourages applicants to participate on Integrated Project Teams to foster exchange at the federal, state, tribal and local level as well as other entities early in 2005.

Institutional Controls Tracking System Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
	FY 2005	**FY 2006**		**FY 2007**	
Incorporate data standards into state/territorial/tribal and other information system	FY2005 ongoing	X	X	X	X
Complete mappings to Standard/XML Schema and test	FY2005 1st half	X	X	X	X
Pilot XML file transfer through CDX	FY2005 1st half	X	X	X	X

Integrated Compliance Information System – National Pollutant Discharge Elimination System

System Description:
ICIS-NPDES will be the modernized version of the Permit Compliance System (PCS). It supports traditional wastewater discharge program functions (e.g., permitting, compliance monitoring, and enforcement), as well as new functions for special regulatory programs, such as concentrated animal feeding operations (CAFO). ICIS-NPDES will allow for data exchanges using XML and Web services via the Exchange Network and provide links to other EPA databases (e.g., FRS).

The Agency's ability to track compliance with the Clean Water Act (CWA) NPDES program will be significantly improved by the modernization of PCS. A modernized PCS is critical to the enhancement of EPA's and states' ability to manage the NPDES program. Reliable, comprehensive and up-to-date data systems are a key to EPA's ability to effectively target compliance monitoring at the highest priority facilities and areas and to measure the effectiveness of its enforcement and permitting activities. In contrast to legacy PCS, modernized PCS will contain more data on more of the sources that discharge pollutants into our nation's water (e.g., CAFOs and storm water). This expanded scope and the more robust functionality of modernized PCS will improve the ability of EPA and states to implement the NPDES program to protect our nation's water. Completion of ICIS-NPDES (PCS Modernization) is the key to EPA's ability to comply with the Government Performance and Results Act (GPRA), tracking environmental results to show environmental ICIS-improvements (i.e., improved water quality), as well as a major step forward in EPA's efforts to provide states with the ability to exchange environmental and compliance data with EPA.

Status and Plans:
Over the last three years, OECA, the Office of Water (OW), and EPA Regions, in collaboration with state partners, have accomplished a significant amount of work on ICIS-NPDES (PCS modernization). The first three of the six phases of the Agency's System Life Cycle process have been completed for ICIS-NPDES: Concept Definition, General Design, and Detailed Design. The fourth phase of the Life Cycle process, System Development, is well underway. The three completed phases were done with extensive participation from our users – states and EPA Regions and Headquarters offices (OECA,OW,OEI) – via work groups, document reviews, and meetings.

Work Currently Underway:
- Began software development (May 2004)
- Data migration (ongoing): Data Migration Plan (April 2004); Data Migration Work Group formed (May 2004) including 13 state participants (AR,CO,GA,HI,IN,WI,MD,MO,NJ,NY,OH,UT,VA), all 10 EPA Regions, and EPA Headquarters offices (OW, OECA, and OEI)
- Software technical specifications completed on schedule (September 2004).

Key Future Milestones (all milestones contingent on FY05, FY06 and FY07 funding):
- December 2005: ICIS-NPDES Version 1 Release (12 Direct Entry User States) (7 approved to implement NPDES program; 5 not approved to implement NPDES program)
- June 2006: ICIS-NPDES Version 1.5 Release (Remaining Direct Entry User States)
- June 2007: ICIS-NPDES Version 2.0 Release (Remaining Non-Direct Entry States) (XML batch submissions via the Exchange Network)

ICIS-NPDES XML Schema:
The draft ICIS-NPDES schemas are available now for states to begin initial data mapping of their state system data to ICIS-NPDES. The final ICIS-NPDES schemas will be available by the end of November 2004, at which time states can begin finalizing their ICIS-NPDES schema mapping. In January of 2007, ICIS-NPDES will be ready to begin testing the receipt and processing of test data transmissions from states via CDX into the ICIS-NPDES system. This assumes, however, that prior to January 2007, states have registered with CDX and have tested the functionality of submitting their test data to CDX and having the data verified and accepted by CDX. *In June 2007, OECA expects to complete the implementation of state NPDES XML data flows into ICIS-NPDES and will no longer accept flat file transfers from states into legacy PCS.*

ICIS-NPDES (PCS Modernization) Office of Enforcement and Compliance Assurance							
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Continue coordination with OEI Data Standards Branch to ensure system conformity to data standards, as appropriate, per the ICIS data standards conformity review	Ongoing	X					
Develop final schema for ICIS-NPES XML data flow	FY 2005 (1st half)	X					
Continue ICIS-NPDES data migration activities in coordination with EPA Headquarters, Regions, states, and Data Migration Workgroup participants	Ongoing	X	X	X	X	X	X
ICIS-NPDES software development	Ongoing	X	X	X	X	X	
ICIS-NPDES Version 1 Release (12 direct entry user states) (7 approved to implement NPDES program / 5 not approved to implement NPDES program)	FY 2006 (1st half)			X			
ICIS-NPDES Version 1.5 Release (remaining direct entry user states)	FY 2006 (2nd half)				X		
CDX/state registry, CDX/state functionality testing, and CDX state data verification and acceptance	Ongoing – FY2007 (1st half)	X	X	X	X	X	
Start ICIS-NPDES testing of the receipt and processing of state data transmissions from states systems via CDX and the Exchange Network into the new ICIS-NPDES system	FY 2007					X	X
ICIS-NPDES Version 2.0 Release [remaining non-direct entry states (~30)] (XML batch submissions via the Exchange Network)	FY2007 (2nd half)						X

Suggested Activities for Exchange Network Partners:
The modernization of legacy PCS into ICIS-NPDES will affect all users of the system, but for purposes of this grant program, the focus is on two groups of states: 1) states that do not directly enter data into PCS, but instead submit batch files from their state system to PCS (these states are often called "non-direct users of PCS"); and 2) states that are currently using the CDX-PCS Interim Data Exchange Format (IDEF) to flow data into legacy PCS or are scheduled to do so per agreement with EPA.

The FY 2005 Exchange Network Grants Program focuses primarily on these two groups of states—those that currently submit flat files to legacy PCS and those that are current/scheduled users of CDX-PCS IDEF. These states may wish to consider some of the following activities, which will support the exchange of NPDES XML data with ICIS-NPDES using the Exchange Network.

ICIS-NPDES (PCS Modernization) Office of Enforcement and Compliance Assurance					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Obtain technical training and support for using XML	Ongoing	X	X	X	
Extract and convert the data from state NPDES systems into the XML format needed to submit data to ICIS-NPDES	FY 2006 / FY 2007	X	X	X	X
Modify state systems to accommodate the new/revised data requirements of ICIS-NPDES	FY 2006 / FY 2007	X	X	X	
Modify state data extraction/conversion software to accommodate new/revised ICIS-NPDES submission and transaction types (e.g., for special regulatory programs)	FY 2006 / FY2007	X	X	X	
In coordination with EPA, synchronize and then migrate the data in legacy PCS to ICIS-NPDES	FY 2006 / FY 2007	X	X	X	X
Non-Direct State Users of PCS via Flat File Batch Processing – develop state XML schema export capability to generate XML data documents using the ICIS-NPDES schema	FY 2006 / FY 2007	X	X	X	X
Non-direct State Users of PCS via IDEF "Pass through" – modify state XML export capabilities to generate XML data documents using the ICIS-NPDES schema	FY 2006 / FY 2007	X	X	X	X
Non-direct State Users of PCS via IDEF "Middleware" – modify state XML export capabilities to generate XML data documents using the ICIS-NPDES schema; no "Middleware" is planned for the ICIS-NPDES data flow, and data will be treated in all cases as "pass-through" (a few IDEF states may need to modify their state systems and/or extraction software to accommodate this fact)	FY 2006 / FY 2007	X	X	X	X
Implement node-to-node communications with CDX	FY 2006 / FY 2007	X	X	X	X

National Emissions Inventory

System Description:
NEI is a national database of air emissions information which includes input from numerous state and local air agencies, tribal nations, industry, and other federal databases [e.g., EPA's Clean Air Markets Division (CAMD) Emission Tracking System, Maximum Achievable Control Technology (MACT) Program, and the Toxic Release Inventory (TRI)]. The NEI database contains information on stationary and mobile sources that emit criteria air pollutants and precursors, as well as hazardous air pollutants (HAPs). NEI data are used for air dispersion modeling; tracking emission trends; and developing risk assessments, regulations, and regional pollution control strategies.

The state, local, and tribal air agencies have data collection programs with regulated facilities; and these data make up the stationary point source sector of the emission inventory. State, local and tribal agencies maintain their own database storage and handling systems to compile the point and non-point portions of their local inventories. These agencies transfer data to NEI as stationary point sources, stationary non-point sources, and mobile sources. The national Consolidated Emissions Reporting Rule (CERR) requires that state and local agencies provide criteria pollutant emissions data to EPA by June 1 of each year, including point-source data annually and a complete report on both point and non-point sources every three years. Currently, there are two acceptable formats for transferring data to NEI, i.e., the NEI Input Format (NIF) and the NEI XML schema. The structures of these formats are different, but the data content is the same.

The NEI data collection objectives include the following:

- utilize and maintain standard file transfer formats with trading partners;
- document required data standards and quality measures to potential trading partners;
- adopt resource-efficient approaches to reduce format and content errors in the files received; and
- reduce the data transfer cycle time between the regulated facilities (point sources); state, local, and tribal air agencies; and EPA

The strategic goals of the Exchange Network support these objectives by promoting technology- and process-based solutions to improve data quality, integrate data from different sources, and reduce reporting burden for regulated entities as well as states/territories/tribes. Some of the tools available to Exchange Network partners include XML schema; CDX validation and quality control routines; EDSC-approved data standards; EPA data standards; and automated, rapid notifications of file receipt, error findings, and required corrective actions.

Status and Plans:
In 2004, XML schemas were updated to comply with EDSC-approved data standards and to facilitate the integrated transfer of criteria and HAP pollutant data to the NEI for the required emission source sectors (i.e., point, area, non-road mobile, and on-road mobile). Also in 2004, data exchanges using the XML schemas were pilot tested with several states and the schemas were subsequently endorsed by the Network Steering Board's Technical Resources Group (TRG) for use over the Exchange Network. Node–to-node transmissions of NEI data were also tested. The NEI XML schemas are considered fully operational and ready for implementation by Exchange Network partners. In addition, some extended quality checks of the data were introduced into the XML validation routine at CDX.

During FY2005, EPA will solicit feedback from the NEI data trading partners on possible improvements to the NEI data collection format(s) to enable easier and more convenient data transfers. EPA also plans to discuss with data trading partners a proposal to expand and improve the automated quality control checks of NEI-formatted files that are used during the format validation step that occurs at CDX. In addition, in FY 2005 EPA will

conduct a Rapid Inventory Development Pilot Project with several agencies to test and model the expectation that the time it takes agencies to collect the data from facilities, and eventually transfer the data to EPA may be dramatically reduced. (See suggested Challenge Category activities below.)

NEI Data Flow Office of Air and Radiation Office of Air Quality Planning and Standards							
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Incorporate approved data standards into NEI data collection process	Completed FY04						
Develop XML schema for NEI data flow	Completed and available FY04						
Test node-to-node data exchanges with pilot partners [1]	Completed FY04						
Support operational node-to-node data exchanges at CDX [1]	FY 2005 (1st half)	X	X	X	X	X	X
Solicit feedback from trading partners on data formats and automated QC criteria	FY 2005 (1st half)	X					
Revise / update NIF & XML formats and QC checks as necessary and publish for use in subsequent NEI data collection cycles	FY 2006 (1st half)		X	X			

1. OEI program support function

Suggested Activities for Exchange Network Partners:

Suggested Implementation Category Activities
Applicants applying for the Implementation Category may wish to consider implementing approaches/processes to improve the quality of data in state and local emissions inventory data systems, including the following:

- Develop and implement routine NEI data transfers using the XML schema with automated format validation and data quality control processes. The objective would be to validate the XML file at both the local point of generation of the data and at CDX.
- Develop and implement technical approaches to integrate now-separate data systems and data exchanges for criteria and HAP emission data, so that pollutant emissions are reported together over the Exchange Network on a consistent process/unit basis.

Success would be demonstrated by the timely correction of format and content efforts and an error-free CDX validation report by the data submission date of June 1, or earlier if possible. Success could include participation in the development of technical

approaches to confirm correct file formatting and data content (i.e., consistent with NEI data content requirements) prior to transferring the data over the Exchange Network, as well as after the data are submitted to EPA through CDX.

If proposing to exchange significant emissions data assets that are not currently in the NEI, applicants should describe the data flow, the business case for such a flow, and the approaches that would be used to provide other Exchange Network partners with secure access to the data (including documentation on data quality checks).

NEI Data Flow **Suggested Implementation Category Activities for Exchange Network Partners**					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Incorporate EPA/ NEI data collection standards into state/local/tribal information system	FY 2006 (1st half)	X			
Map information system data to the NEI XML schemas and integrate extended QC checks	FY 2007 (1st half)	X	X	X	
Design, develop, and test Exchange Network node	FY 2007 (1st half)	X	X	X	
Test node-to-node NEI data flow and CDX validation	FY 2007 (1st half)		X	X	
Submit production NEI 2005 data using the Exchange Network node	By Dec 2006 or NLT Jun 1 2007 FY 2007 (2nd half)			X	X

Suggested Challenge Category Activities

The Challenge Category may be particularly appropriate for supporting projects that build upon previous and pending NEI data flow projects and on EPA's objective of reducing the amount of time it takes to report data from regulated facilities (point sources); to state, local, and tribal air agencies; and to EPA. In FY 2005, EPA plans to conduct a Rapid Inventory Development Pilot Project with several air agencies to demonstrate the potential for shortening the time required to obtain a complete year of NEI data.

Suggested NEI activities that could benefit from group collaboration might include the following:

- Acknowledging and building on the results of the EPA and state Rapid Inventory Development Pilot Project; and

- Developing approaches and tools to shorten the time required for facilities to submit quality-reviewed NEI point source data, using XML schema and quality control validation routines.

Successful projects could result in the development of "toolkits" that could be used by other agencies and regulated facilities to facilitate the reporting of NEI data. The experiences of some states that are already receiving Web-based emissions reports from regulated facilities indicate that it may be possible to achieve substantial reductions in the amount of time required to transfer data from facilities to the states and then from states to EPA. EPA believes that it may be possible for it to receive quality-reviewed NEI reports within six to ten months from the end of the calendar year.

NEI Data Flow
Suggested Challenge Category Activities for Exchange Network Partners

Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Design options for process and tools solution that is aligned with practical findings from the EPA/ State Rapid Inventory Development Pilot	FY 2006 (2nd half)	X	X		
Select best solution that may be made readily available and adapted to by broader NEI data exchange community. Validate community acceptance and technological capacity to implement. Test real application scenarios including performance of data QC checks, and document results.	FY 2007 (1st half)	X	X	X	
Demonstrate and apply the tool solution by testing data transfer from facility to state, and to EPA through Exchange Network. Confirm quality checked data results.	FY 2007 (1st half)		X	X	
Integrate tool solution and data flow process into state systems.	FY 2007 (1st half)		X	X	
Submit production NEI 2005 data using the Exchange Network node.	By Dec 2006 FY 2007 (1st half)			X	

National Pollution Prevention Results System

System Description:
The P2 Results System is a proposed system, scheduled for implementation in FY 2005, designed to create an efficient and effective way to analyze and present the results of pollution prevention for the states, EPA Regions and the entire country. The overall goal is to collect and display the results of the P2 approach to environmental protection, and to support continuous improvement in P2 program management and delivery of P2 services.

The system includes a framework for data collection, starting with businesses and other organizations providing data to state and local P2 programs, who would collect the data, typically on desktop data tracking systems. Data would then be aggregated on a regional basis, typically using software tools that can apply other factors for analysis. There would be a national roll-up of the results data, including a report that would include both quantitative data tracking national progress and other qualitative information.

Status and Plans:
The National P2 Results System is being developed by the P2 Results Task Force, which is made up of state representatives from the National Pollution Prevention Roundtable (NPPR) and the Pollution Prevention Resource Exchange (P2RX) Centers. NPPR is the designated co-regulator for EPA's national pollution prevention program. The P2RX centers are university-based locations for disseminating P2 information. The development of the National P2 System is supported by an EPA Cooperative Agreement to NPPR.

National P2 Results System
Office of Prevention, Pesticides, and Toxic Substances

Goal, Objective, or Milestone	Target Completion Date (FY & 6-month period)	Estimated Duration of Activities					
		FY 2005		FY 2006		FY 2007	
Complete data dictionary and guidance	FY 2005 (1st half)	X					
Review of draft system by P2 community	FY 2005 (1st half)	X					
Adopt National P2 Results System	FY 2005	X					
Disseminate System information	Ongoing	X	X	X	X	X	X
Develop training and other support	FY 2005	X	X	X	X	X	X
Report national data using System	Ongoing	X	X	X	X	X	X
Develop XML schema	FY 2006			X	X	X	X
Support node-to-node exchanges	FY 2007					X	X

Suggested Activities for Exchange Network Partners:
Key national partners are the NPPR and the P2RX Centers, whose collaborative efforts led to the development of the System. State partners include state government agencies and universities, which manage P2 programs and will gather P2 data using the System. (Note that universities and nonprofit organizations are not eligible to apply for or receive FY 2005 Exchange Network grants, but EPA encourages such groups to collaborate with the eligible state, tribal, or territorial agencies.) In FY 2005, partners will be asked to sign a Memorandum of Agreement (MOA) to use the System and to adopt the System's core metrics and definitions. This chart focuses on activities during the project period for FY 2005-funded grants.

National P2 Results System
Suggested Activities for Exchange Network Partners

Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Revise survey instruments, etc. as necessary	Ongoing	X	X	X	X
Revise/add desktop data tracking systems	Ongoing	X	X	X	X
Revise/add regional data aggregation tools	Ongoing	X	X	X	X
Provide training and other support	Ongoing	X	X	X	X
Report data using National System	Ongoing	X	X	X	X
Develop regional and national reports	Ongoing	X	X	X	X
Help develop XML schema	FY 2006	X	X	X	X
Design and test Exchange Network node	FY 2007			X	X

Resource Conservation and Recovery Act Information System

System Description:
RCRAInfo is a comprehensive EPA information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo contains both programmatic and enforcement information regarding the solid/hazardous waste program, including facility status, regulated activities and compliance data.

Status and Plans:
EPA has been working collaboratively with the Environmental Counsel of States (ECOS) on a pilot RCRA data exchange effort. ECOS has been developing schemas and translators that could be used for completing XML exchanges. In fall of 2004, ECOS and EPA expect to achieve success in implementing State-to-EPA Network Exchanges with the RCRA "Handler" module and anticipate subsequent implementation of the other modules later in the fall of 2004 to the spring of 2005. As of October 2004, ECOS, EPA and a handful of states are testing end-to-end some of these modules.

RCRAInfo Office of Solid Waste							
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Planned Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Incorporate approved data standards into national information system	FY 2006 2nd half				X		
Develop XML schema for Handler data flow	FY 2005 (1st half)	X	X	X			
Develop XML schema for Permitting and Corrective Action data flow (pilot/phase I)	FY 2005 (1st half)	X	X	X			
Develop XML schema for Compliance Monitoring and Enforcement data flow (Version 2.0 pilot/phase I)	FY 2005 (1st half)	X	X	X			
Develop XML schema for Permitting and Corrective Action data flow (production/phase II)	FY 2005 (2nd half)		X				
Develop XML schema for Compliance Monitoring and Enforcement data flow (Version 3.0 production/phase II)	FY 2005 (2nd half)	X	X	X			
Test node-to-node (State-to-EPA) data exchanges	FY 2005 (1st half)	X	X				
Support operational node-to-node (State-to-EPA) data exchanges	FY 2005 (2nd half and ongoing)		X	X	X	X	X

Suggested Activities for Exchange Network Partners:
States and tribes are encouraged to complete their mappings to the Handler XML schema any time after EPA's implementation. EPA also encourages grantees to participate on Integrated Project Teams, monitor progress, or test the remaining schemas early in 2005. Testing in the fall of 2004 of the Permitting and Corrective Action schemas will determine the extent of the revisions, which would take place under a Phase II. States and tribes could anticipate that if changes are needed to the Permitting and Corrective Action schemas, the changes would be structural in nature. The Compliance Monitoring and Enforcement module will be released as a new version (3.0) in the summer of 2005 to include new data requirements and possibly structural changes. More information can be provided after testing and implementation of Phase I.

RCRAInfo Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
	FY 2005	**FY 2006**		**FY 2007**	
Incorporate approved data standards into state/territorial/tribal information system			X	X	X
Complete mappings to Handler XML Schema and test	FY2005 (1st half)	X	X	X	X
Complete mappings to Permitting and Corrective Action XML Schemas and test (pilot/phase I)	FY2005 (1st half)	X	X	X	X
Complete mappings to Compliance Monitoring and Enforcement XML Schema and test flow (Version 2.0 pilot/phase I)	FY2005 (1st half)	X	X	X	X
Complete mappings to Permitting and Corrective Action XML Schema and test (production/phase II)	FY2005 (2nd half)	X	X	X	X
Complete mappings to Compliance Monitoring and Enforcement XML Schema and test (Version 3.0 production/phase II)	FY2005 (2nd half)	X	X	X	X
Test node-to-node (State-to-EPA or State-to-State) data flow	FY2005 (1st half)	X	X	X	X
Submit production RCRA data using the Exchange Network node	FY2005 (2nd half)	X	X	X	X

Safe Drinking Water Information System/Federal Version

System Description:
SDWIS/FED is an EPA national database that stores routine information about the Nation's drinking water. SDWIS/FED was designed to replace the Federal Reporting Data System (FRDS), and it stores the information EPA needs to monitor approximately 160,000 public water systems. As required by the Safe Drinking Water Act (SDWA), states oversee public water systems within their jurisdictions to ensure compliance with EPA and state drinking water standards. States periodically report drinking water information to EPA, and this information is stored in SDWIS/FED. The Office of Ground Water and Drinking Water (OGWDW) and the Office of Enforcement and Compliance Assistance use the data in SDWIS to oversee the nation's drinking water program and to track the progress of program in protecting public health. Currently, the data flows supporting the Public Water Systems Supervision (PWSS) Program include: 1) SDWIS-Fed, 2) the National Occurrence Data Base (NCOD), and 3) the Safe Drinking Water Accession and Review System. In the near future, OGWDW will be determining the need for two more data flows: sample data and airplane-truck-ship data.

Status and Plans:

- The target date for SDWIS Modernization completion is December 31, 2004. The legacy system is scheduled to be "turned off" on September 30, 2005.
- The XML schema for the drinking water data flow from states to EPA was completed in April 2004.
- October 18, 2004, is the day targeted for CDX registered data providers to be able to provide xml-formatted files to SDWIS. From this day forward, SDWIS will be able to support node-to-node data exchanges of drinking water data files with States.

Modernization Efforts Plan: OGWDW has identified the following milestones for modernizing SDWIS

- Maintain most or all historical support functions for both the SDWIS/FED database and SDWIS/STATE software (30 states are currently using SDWIS/STATE and six additional states are committed and scheduled to use it).
- Provide drinking water data providers (states and Regions) with access to CDX through a registration process.
- Conduct a pilot project using XML schema for a State-to-EPA data flow.
- Conduct a pilot project using FedRep validation software (desktop application). The software incorporates the State-to-Fed XML schema and is intended to move the validation of state data submissions closer to the data providers, thus minimizing reporting delays and errors.
- Launch the production of the ORACLE replacement database that will allow EPA to receive XML files of drinking water data from states through CDX.
- Enhance and expand the Drinking Water Data Warehouse. The Drinking Water Data Warehouse extracts data from SDWIS and organizes it into topic-specific Pivot Tables that are available over the Internet for on-line querying by the public. OGWDW is discussing the potential development of new formats for presenting the data.

In addition to these SDWIS-Fed modernization activities, OGWDW is involved with the following:

- Develop a Web-enabled version of the SDWIS/STATE software—the primary state implementation assistance tool.
- Collect sample data.
- Establish a flow to support tracking drinking water usage interstate conveyers, such as airplanes, trucks and ships.

SDWIS Modernization Data Flow Activities
Office of Water

Activity Goal, Objective, or Milestone	Target Completion Date (FY & 6- month period)	Estimated Duration Of Activities							
		FY 2004		FY 2005		FY 2006		FY 2007	
Maintain most/all historical support functions for both SDWIS-FED and SDWIS-STATE.	FY 2005 (2nd half: SDWIS-Fed) Ongoing: SDWIS-State				X Fed				X State
Provide CDX access to drinking water data providers through a registration process	FY 2005 (1st half)			X					
Pilot XML-schema developed for data flow from states to EPA	FY 2004 (1st half)	X							
Pilot FedRep validation software	FY 2004 (1st half)	X							
Launch production Oracle replacement database	FY 2005 (1st half)			X					
Enhance/expand the Drinking Water Data Warehouse	FY 2005/Ongoing (2nd half)				X				
Web-enable SDWIS-STATE, the primary state implementation assistance tool	FY 2005 (1st half, Phase 1: Beta) FY 2005 (2nd half, Phase 1 Production) FY 2006 (1st half, Phase 2: Beta) FY 2007 (1st half, Phase 2: Production)				X P1			X P2	

SDWIS Modernization Data Flow Activities Office of Water									
Activity Goal, Objective, or Milestone	**Target Completion Date (FY & 6- month period)**	**Estimated Duration Of Activities**							
		FY 2004		**FY 2005**		**FY 2006**		**FY 2007**	
Conduct workshops to build on and market successes of previous grants to all states (e.g., Drinking Water Lab Results Challenge Grant)	Ongoing								X
Node-to-node exchange for existing data flows: PWSS Program SDWIS-Fed summary data	FY 2006 (1st half)					X			
Node-to-node exchange for existing data flows: PWSS Program occurrence data							X		
Test node-to-node exchange for PWSS Program UCMR-2 data								X	
Test node-to-node exchange for PWSS Program ICC data									X

Suggested Activities for Exchange Network Partners:

SDWIS Modernization Data Flow Activities Suggested Activities for Exchange Network Partners					
Activity Goal, Objective, or Milestone	**Target Completion Date (FY & 6 month period)**	**Estimated Duration Of Activities**			
		FY 2006		**FY 2007**	
Flow node-to-node exchange for PWSS Program summary data	FY 2006 (First Half)	X			
Test node-to-node exchange for PWSS Program occurrence data	FY 2006 (Second Half)		X		
Flow node-to-node exchange for PWSS Program occurrence data	FY 2007 (1st half)			X	
Web-enable SDWIS-STATE, the primary state implementation assistance tool	FY 2006 (1st half, Phase 2: Beta) FY 2007 (1st half, Phase 2: Prod.)			X P2	

SDWIS Modernization Data Flow Activities Suggested Activities for Exchange Network Partners					
Activity Goal, Objective, or Milestone	**Target Completion Date (FY & 6 month period)**	**Estimated Duration Of Activities**			
		FY 2006		**FY 2007**	
Conduct workshops to build on and market successes of previous grants					

Source Water Protection

System Description:
The SWP data exchange initiative is a collaborative effort between OW and state programs implementing the SWP program under the Safe Drinking Water Act (SDWA). States were required under the SDWA 1996 amendments to develop a source water assessment program (SWAP) no later than May, 2003, to include four elements: 1) delineation of the source water areas (SWA) around each well or intake; 2) an inventory of potential contamination sites within each SWA; 3) a susceptibility analysis of each SWA; and 4) a plan to make this information available to the public.

In FY 2003, OW requested access to selected portions of each State's SWAP to use in targeting vulnerable source waters for its developing source water protection program. OW is developing national geographic information systems (GIS) coverage of the delineated SWA polygons it receives from the states and a ORACLE-based relational data module to hold the SWA attribute data and related information needed to calculate progress against the measures included in the drinking water strategic plan. The SWP data supports specific measures contained in GPRA and the Agency strategic plan. Once system development is complete, the GIS coverage of the SWA polygons and the related tabular data in the SWP data module will be housed in the Reach Address Database (RAD) in OW's WATERS data platform.

The planned data flow to the SWP data module is from the states' existing databases into an XML schema through EPA's CDX into EPA's SWP data module. This is an ancillary initiative attached to the larger SDWIS data modernization initiative, and it will be integrated with that initiative. All SWA polygons received from the states are linked by ID to the wells and intakes from the public water system inventory data, which are also reported by the states into SDWIS.

Status and Plans:

Activities to Date: In FY 2003 and FY 2004, OW developed and populated the new SWA polygon GIS coverage with state data voluntarily submitted, installed a proposed SWP data module for the SWP tabular data, and created an XML schema for potential use in transferring the data from the states to EPA:

- The test *SWA polygon GIS data layer* was developed and deployed in the WATERS RAD in early FY 2004. Currently, the data layer contains SWA polygon data from 24 states. Access is currently restricted to system development staff until approval is granted to make the data available to EPA programs.
- The test ORACLE-based *SWP data module* was developed and deployed on a development server in mid-FY 2004. Currently, the SWP module is populated with five states data. Access is currently restricted to system development staff until approval is granted to make the data available to EPA programs.
- A pilot data transfer initiative was conducted in FY 2004 with the Ground Water Protection Council (GWPC), a state association, to test the proposed data flow from the states through an XML schema to the SWP data module. An XML schema was developed and populated with four states' data and the XML file was input into the SWP data module.

Planned Activities in FY 2005: OW plans to update the SWA polygon GIS data layer with state-submitted coverages based on voluntary state submissions of the complete set of GIS data. OW also plans to update the SWA data module and XML schema based on the latest SWP Measures Guidance under the FY 2005 Strategic Plan.

Planned Activities Starting in FY 2005 through FY 2006: OW also plans to develop and test the proposed data flow from the states into the existing XML schema through CDX into the SWP data module.

Source Water Protection (SWP) Data Exchange
EPA Office of Ground Water and Drinking Water (OGWDW)

Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Complete Round 2 of SWA Polygon Data collection from the states and into OW's GIS data layer in WATERS	FY 2005 (2nd half)	X	X				
Revise the SWP data module based on updated reporting guidance for FY 2005	FY 2005 (1st half)	X					
Revise the XML schema for the SWP data module based on updated reporting guidance for FY 2005	FY 2005 (1st half)	X					
Initiate second round data transfer pilot initiative with voluntary states through GWPC		X	X	X			
Test node-to-node data exchanges	FY 2006 2nd half)		X	X	X	X	X
Support operational node-to-node data exchanges	Ongoing (as states choose to participate)			X	X	X	X

Suggested Activities for Exchange Network Partners:

Source Water Protection (SWP) Data Exchange Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Design, develop, and test Exchange Network node	FY 2005 (2nd half)	X	X		
Help develop XML schema for SWP data exchange data flow, by participating in the Integrated Project Team (IPT)	FY 2006 (1st half)	X			
Map information system data to the XML schema	FY 2006 (2nd half)	X	X		
Test node-to-node SWP data exchange data flow	FY 2007 (1st half)		X	X	X
Submit production SWP data exchange data using the Exchange Network node	FY 2007 (2nd half)			X	X

Toxic Release Inventory System

System Description:
The TRI program was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990. TRIS is a publicly available database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry sectors, as well as federal facilities. Currently, EPA and states collect identical information from the same reporting population for their own records. TRIS is populated by TRI-Made Easy (TRI-ME) via CDX and EPA's Data Processing Center and by hard-copy submissions which are entered manually.

Status and Plans:
The TRI program is in the preliminary design phase of re-engineering its data flow processes (e.g., data collection through dissemination). The re-design of the TRI information flow would depict a total electronic submission of TRI data. This effort includes the development of a Web-based version of the TRI-ME data collection software. Another important element to this re-engineering effort is the development of

the TRI-State Data Exchange Network process to establish an outbound flow of TRI data via CDX to state nodes. There will be many benefits to states that use the Exchange Network. States that use the Exchange Network will no longer have to maintain separate processing systems to capture and disseminate TRI data. Another critical goal is that facilities would report directly to EPA and the data would flow to the states as soon as it is available. The data quality of TRI data would also significantly improve because the transfer of data would be electronic. The State-EPA TRI data reconciliation process would no longer be necessary.

The TRI Program is participating in the Exchange Network, including the use of XML schema for the Form R and Form A Certification Statements, which will allow states to test and implement this process as part of the FY2005 grant program. The following TRI Program milestones are scheduled for the FY2005 process.

Toxics Release Inventory
Office of Environmental Information

Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Define/modify state/EPA Data Requirements	Ongoing	X	X	X	X	X	X
Develop/test/pilot XML Schema	FY 2006 (1st half)	X	X	X			
Develop Web services for data transfer and retrieval	FY 2006 (2nd half)		X	X	X		
Identify additional data requirements from the FY2005 process	FY 2007 (2nd half)			X	X	X	X
Test and Support operational node-to-node data exchanges	Ongoing		X	X	X	X	X

Suggested Activities for Exchange Network Partners:

Toxics Release Inventory Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Work with the TRI Program to test XML data flows from EPA to state nodes	FY 2006	X	X		
Work with the TRI Program to modify existing tools and develop new tools/applications that states can use for TRI data that can be made available through Web Services using the TRI state data exchange (node clients)	Ongoing	X	X	X	X
States should propose alternative methods for the import/export of TRI data into their systems which is currently provided by the UTIL software	Ongoing	X	X	X	X
Work with EPA to develop processes/tools that allow facilities to report to EPA only; facility data would be available to both EPA and states simultaneously	FY 2007 (2nd half)		X	X	X
Use the TRI XML schema and develop loading/converter tools to populate the state database directly from incoming data sources such as CDX	FY 2007 (2nd half)	X	X	X	X

Underground Injection Control

System Description:
There is currently no national UIC facility-level database. The proposed UIC Relational Data Base Management System (RDBMS) will include:

- An EPA repository of program information from the states and EPA Direct Implementation (DI) programs (i.e., programs administered by EPA),
- A data transfer mechanism (using an XML schema through CDX) from the states and DI programs to extract the data periodically to EPA,
- A data transfer mechanism from the UIC repository to other EPA databases (e.g., ICIC, FRS), and
- A data warehouse to meet the EPA user data needs (including other EPA programs).

The data repository will store well-specific facility level data needed to address the business drivers, including UIC inventory (including a key ID, permit information, and geospatial information, inspection data, violation information, and enforcement actions). It represent a very small, core set of UIC data elements needed to meet EPA's state

primacy oversight and federal responsibilities, to effectively integrate the UIC program into the source water protection program and other federal programs, and to efficiently respond to the myriad of information requests from the program stakeholders. All the data to be transferred to the new EPA data repository are already collected in some form

by the states and DI programs from the UIC regulated community under the UIC regulations.

The UIC RDBMS will support a single UIC data flow from the state and regional DI programs to support all national environmental programs requiring UIC data. Data is currently collected from the states and DI programs at state summary level only, which is inadequate to address a growing list of UIC Program and EPA agency-wide business needs. Business drivers also exist at an Agency level, above and beyond those called out below, that align with Agency efforts to centralize data collections, reduce data redundancy, and support future initiatives, such as CDX. (For a copy of the *Business Case for the Establishment of a National UIC Database*, dated April 23, 2004, contact Carl Reeverts, Project Manager, Drinking Water Protection Division, at (202) 564-4632.)

Status and Plans:

Planned Pre-Requirements Analysis Activities in FY 2005: OW completed a business case report in FY 2004 and other pre-requirements analysis activities to support a decision to develop a new UIC database.

Several other pre-requirements analysis activities are currently underway:

- Reviewing and revising the initial set of minimum data elements proposed for the new database, developing a conceptual relational data model and data element dictionary;
- Soliciting information on existing databases at the state and EPA direct implementation programs to determine whether the minimum data needs already exist in current databases;
- Evaluating data integration options with other Agency databases that have or need access to UIC data; and
- Working with states and GWPC to assess the burden of the needed UIC data flow form state databases to EPA through the EPA exchange network and CDX.

Planned Activities Starting in Late FY 2005 through FY 2007: outlined in the table below.

Underground Injection Control (UIC) Data Flow Activities EPA Office of Ground Water and Drinking Water (OGWDW)							
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Estimated Duration of Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Complete relational database structure and dictionary, including approved Agency data standards	FY 2005 (1st half)	X					
Develop pilot data transfer schema (using XML) to conform to database structure and solicit state volunteers to map their database into the XML schema	FY 2005 (2nd half)		X				
Develop proposed XML schema for the UIC, based on pilot results	FY 2006 (1st half)			X			
Work with states to map their UIC data to the XML schema	FY 2006 (1st half)			X			
Test node-to-node data exchanges	FY 2006 (2nd half)				X	X	
Support operational node-to-node data exchanges	FY 2007 (1st half)				X	X	X

Suggested Activities for Exchange Network Partners:

Underground Injection Control (UIC) Data Flow Activities Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Develop XML schema for UIC electronic data flow from the UIC well owner/operator (the regulated community) to the state primacy agency, to meet well reporting requirements	Ongoing	X	X	X	X
Help develop XML schema for UIC data flow from state to EPA, by participating in the Integrated Project Team (IPT)	FY 2006 (1st half)	X			
Map state's information system data to the XML schema	FY 2006 (2nd half)		X	X	
Test node-to-node UIC data flow	FY 2007 (1st half)		X	X	X

Underground Injection Control (UIC) Data Flow Activities Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Submit production UIC data using the Exchange Network node	FY 2007 (2nd half)		X	X	X

Water Quality Monitoring Data Exchange

System Description:
Presently, the STORET system is EPA's main repository of water quality and biological monitoring data. It contains data obtained from a variety of organizations across the United States ranging from small volunteer watershed groups to state and federal environmental agencies. Currently, data are entered into a locally operated copy of STORET through the use of a series of desktop validation software applications provided by EPA. These data are centralized at EPA and made available to the public through an Internet accessible Data Warehouse. This architecture ensures that data owners maintain complete control over data content, while at the same time, promoting shared access to these data through the EPA data warehouse. While EPA intends to fully support and operate its existing process for moving data from local copies of STORET to the central STORET Data Warehouse, it recognizes that not all states operate a local copy of STORET.

Status and Plans:
- XML Schema: OW plans to develop full XML tags and schema(s) to support water quality monitoring data exchanges by spring 2005. At that time EPA will release valid domains, XML tags and definitions, and one or more data exchange XML schema(s).
- Pilot Data Exchanges: EPA will conduct pilot Water Quality Monitoring data exchanges with states in 2005. States can begin mapping data in state systems to the Water Quality Monitoring XML Schema and generate exchange data flows into EPA in summer 2005. Testing and validation of data flow submissions will take place in October through December 2005. By spring 2006, OW plans to complete the implementation of XML Water Quality Monitoring data flows into EPA through CDX.
- Web Services: EPA will provide Web services to support queries of water quality data for federal/state/territorial/tribal partners from OW's Water Quality Monitoring data repository.

Water Quality Monitoring Data Exchange (STORET) Office of Water							
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Planned Activities**					
		FY 2005		**FY 2006**		**FY 2007**	
Develop XML schema for exchange of water quality data and Handler data flow	FY 2005 1st half	X			X		
Develop Data Transformation Tool for water quality data flow	FY 2006 (2nd half)	X	X				
Develop XML schema web service validation tool	FY 2006 (1st half)	X	X	X			
Pilot data exchange, node-to-node, and node-EPA	FY 2006 (2nd half)			X	X		
Convert Pilot Data Exchange Project to Production	FY 2007 (2nd half)					X	X
Support production level and operational node-to-node (State-to-EPA) data exchanges	FY 2007 (2nd half)						X

Suggested Activities for Exchange Network Partners:

States wishing to participate in Water Quality Monitoring data exchanges through the Exchange Network should adopt all applicable EDSC-approved data standards, as well as associated method standards from EPA's System of Registries.

- Actively participate in work groups that are developing these data standards.
- Develop translation and validation tools to facilitate data exchange.
- Become familiar with the requirements of Water Quality Monitoring data exchanges with regard to documentation workflows of the monitoring process and environmental results.
- Begin mapping state data to the Water Quality Monitoring Data exchange schema(s) in spring 2005.
- Develop applications that use Water Quality Monitoring Data Web services for federal/state/territorial/tribal partner analyses.
- Establish compatible Web services for Water Quality Monitoring information that could be used by authorized federal/state/territorial/tribal partners.
- Begin linking station locations consistent with the National Hydrography Dataset (NHD) and the Geospatial One Stop Hydrography Standard.
- Coordinate activities with National Water Program Guidance for 2005-2008.

Water Quality Monitoring Data Exchange (STORET) Suggested Activities for Exchange Network Partners					
Goal, Objective, or Milestone	**Target Completion Date (FY & 6-month period)**	**Suggested Activities for Two-Year Project Period (for FY 2005-funded grants)**			
		FY 2006		**FY 2007**	
Actively participate in the various working groups which are developing these data standards	Ongoing	X	X	X	X
Develop translation tools to convert Chemical nomenclature to standard convention	Ongoing	X	X	X	X
Become familiar with the requirements of Water Quality Monitoring data exchanges with regard to documentation workflows of the monitoring process and environmental results	FY 2007 (1st half)	X	X	X	
Begin mapping state data to the Water Quality Monitoring Data exchange schema(s)	FY 2007 (1st half)		X	X	
Test Node-to-node data exchange with Water Quality Data	FY 2007 (1st half)			X	
Develop applications that use Water Quality Monitoring Data Web services for Federal/State/Tribal partner analyses. Test node-to-node UIC data flow	FY 2007 (1st half)		X	X	X
Establish compatible Web services for Water Quality Monitoring information that could be used by authorized Federal/State/Tribal partners.	FY 2007 (2nd half)			X	X
Begin linking station locations consistent with the National Hydrography Dataset (NHD) and the Geospatial One Stop Hydrography Standard.	FY 2007 (2nd half)		X	X	X

Appendix C

Step-by-Step Node and Data Flow Guidelines

This appendix contains ***draft guidelines*** on how to establish an Exchange Network node and develop, test, and flow particular types of data. These guidelines include instructions for developing eBeaches, eDMR, FRS, and NEI and are intended to help Exchange Network partners achieve success in planning and implementing their projects. These guidelines may be updated periodically. Please check http://www.epa.gov/Networkg for the most up-to-date version.

United States Environmental Protection Agency

DRAFT

Step-by-Step Guidelines

Establishing a Node on the Environmental Information Exchange Network

What is a Network Node?

A node serves as a point of presence on the Environmental Information Exchange Network. Using Web services, a node facilitates the flow of environmental data on the Exchange Network between partners, such as EPA, states, territories, tribes, and the public. EPA's node, the Central Data Exchange (CDX), exchanges data between partner nodes and the Agency. Extensive documentation and tools have been developed to provide partners with clear and standardized guidance for building nodes. These resources can be found at the Exchange Network Web site: www.exchangenetwork.net. Following are the steps an exchange partner can take to establish a node.

Step 1: Become Familiar with Background Materials

Below is the core list of background materials to help you with your node-building project.

- Node at a Glance
  http://www.sso.org/ecos/eie/NodeAtAGlance030702.pdf
- Network Nodes: A Primer
  http://www.epa.gov/neengprg/library/networknodes1201.pdf
- Blueprint Report (see the "What Is It?" section of
  www.exchangenetwork.net)
- Network Node Functional Specifications (see the "Resources" section of
  www.exchangenetwork.net)
- Network Node Protocol Document (see the "Resources" section of
  www.exchangenetwork.net)
- Mentoring Group Message Board on www.exchangenetwork.net. For more information on the Mentoring Group, contact Dave Ellis (207-624-9484).

Step 2: Decide on a Foundation for Your Node

- Choose whether you will develop your node in-house or hire a contractor. To learn about contractors, visit the Node Mentoring Group's Message Board at www.exchangenetwork.net.
- Choose a platform: the Sun Java or Microsoft .NET Platform.
- Choose, purchase and install the required hardware, such as servers and software.

Step 3: Establish Administrator Accounts on TEST and PRODUCTION

Contact the Exchange Network Help Desk (888) 890-1995, extension 2) to establish Administrator accounts on TEST and PRODUCTION.

Important: Before proceeding with the next step in the node development process, review the Test Tool information. The Node Test Tool, found at https://test.epacdxnode.net/test/, tests a node's functionalities. The Node Test Tool provides a better understanding of the standards to which partner nodes must conform.

Step 4: Design, Develop and Test Node Functionality

You do not need to develop a node from scratch. The Tool Box section at www.exchangenetwork.net, contains Demonstrated Node Configurations (DNCs) for various configurations. The CDX Team, which developed the CDX Node, also maintains and supports its own DNCs and strongly recommends their use. DNCs are encapsulated, reusable Web services components, which provide a starting point for node development. Once you develop your node, the Test Tool should be used to test the node's functionality.

Step 5: Implement a Flow on Your Node

Select the data—for instance, facility data to EPA's Facility Registry System, FRS—that you wish to send to your exchange partner over the Exchange Network. For a list of available data flows, see the CDX and Exchange Network Web sites. Flow schema and flow configuration documents (FCD) are available on www.exchangenetwork.net. The labor-intensive mapping of data from a partner system to an XML schema is a part of this phase. An FCD describes approaches recommended by the Exchange Network for successfully exchanging data over the Network. The Exchange Network site also provides recommended step-by-step guidelines for implementing particular flows.

Step 6: CDX Tests Your Node

Once a your node is ready to flow data to a particular EPA data system, the CDX Node Help Desk will test the node for that flow. The test will verify both the node's compliance with the Node functional specification and successful exchange of data with the destination Node. The CDX Schematron service provides additional validation for some data flows by generating an XSL file that describes business rules beyond what is included in the schema. The Help desk will inform you if your TEST data flow was successful and if the node is ready to submit Production data.

Step 7: Exchange Production Data Using Your Node to EPA

You will now be able to schedule and exchange Production data for a data flow using your node.

Who Can I Contact for Assistance?

CDX Network Help Desk

The Exchange Network Help Desk is staffed Monday-Friday, 8 a.m.-6 p.m. EST to assist in implementing a state's node. The Help Desk can be contacted at **(888) 890-1995**, extension 2 or nodehelpdesk@csc.com.

Mentoring Group Message Board on www.exchangenetwork.net. For more information on the Mentoring Group, contact Dave Ellis at **(207) 624-9484**.

More information is available about Node Building and the Exchange Network at:

Exchange Network Web Site
http://www.exchangenetwork.net

EPA Central Data Exchange Public Web Site
http://www.epa.gov/cdx

EPA Data Standards Web Site
http://www.envdatastandards.net/

EPA Network Grants Program
http://www.epa.gov/Networkg/

EPA United States Environmental Protection Agency

Environmental Information Exchange Network

DRAFT

Step-by-Step Guidelines

Submitting Production Data to the eBeaches System

Once your state node has been established, you will need to test your node and its ability to exchange data using an EPA data flow, such as eBeaches. Implementing a data flow will allow your state to schedule, submit, and receive data associated with a recognized EPA system. For more information on implementing a state node, see "Step-by-Step Guidelines to Establishing Your State's Node on the Environmental Information Exchange Network."

What is eBeaches?

eBeaches allows states subject to reporting requirements (35 States and territories) promulgated under the Beach Environmental Assessment and Coastal Health (BEACH) Act to submit their beach notification/closure information to PRAWN (Program Tracking, Advisories, Water Quality Standards, and Nutrients) and beach monitoring information to STORET.

Step 1: Obtain XML schema

You will need to obtain the XML schema files associated with the eBeaches flow. The XML schema files provide the format to which your data is required to conform to facilitate data exchange. The schema files are available on the Exchange Network, in the Registry Section at:

http://oaspub.epa.gov/emg/xmlsearch$.startup

Step 2: Establish a CDX Web Account

To submit eBeaches data through the Central Data Exchange Node, EPA's Node on the Exchange Network, you will also need to establish a CDX Web account if you do not already have one. The email address associated with the CDX Web account must be the same email address used for the Node account. Submissions made via the Node that do not have a valid Web account cannot be processed. To establish a CDX Web

account, contact the CDX Help Desk at 888-890-1995, option 1. To establish an account on your state's node, contact your Node Administrator.

Step 3: Map data to schema

Next, you will need to map your data to the schema for the eBeaches flow. This is the most labor-intensive step in the flow development process. Feel free to contact the Node Help Desk during this part of the process. eBeaches data can be submitted to the CDX Node in either XML or zipped format.

Step 4: Verify data format

Once your data is formatted according to the schema, you may submit it for processing. Status reports pertaining to your submission will be sent to your CDX Web account. Upon successful processing of your data, you will receive an edit report, at which point you need to inform the Node Help Desk that your data has been processed. Your node will then be promoted to PRODUCTION for the eBeaches data flow.

Who Can I Contact for Assistance?

CDX Network Help Desk

The CDX Network Help Desk is staffed Monday-Friday, 8 a.m.-6 p.m. EST to assist you in implementing the eBeaches flow for your node. The Help Desk can be contacted at **(888) 890-1995**, extension 2 or nodehelpdesk@csc.com.

Mentoring Group Message Board on www.exchangenetwork.net. For more information on the Mentoring Group, contact Dave Ellis (207-624-9484).

How can I find out more about EPA's eBeaches System and the Exchange Network?

Exchange Network Web Site
http://www.exchangenetwork.net

EPA Central Data Exchange Public Web Site
http://www.epa.gov/cdx

EPA Data Standards Web Site
http://www.epa.gov/edr

EPA Network Grants Program
http://www.epa.gov/neengprg/

United States Environmental Protection Agency

Environmental Information Exchange Network

DRAFT

Step-by-Step Guidelines

Submitting Production Data to the Electronic Discharge Monitoring Report System

Once your state node has been established, you will need to test your node and its ability to exchange data using an EPA data flow, such as e-DMR. Implementing a data flow will allow your state to schedule, submit, and receive data associated with a recognized EPA system. For more information on implementing a state node, see "Step-by-Step Guidelines to Establishing Your State's Node on the Environmental Information Exchange Network."

What is e-DMR?

The electronic Discharge Monitoring Report (e-DMR) is a data submission that tracks pollutant discharge from regulated wastewater facilities. Data submissions are sent from states to EPA's Permit Compliance System (PCS), which accepts files that conform to the Central Data Exchange's (CDX) Interim Data Exchange Format (IDEF).

Step 1: Obtain the Flow Configuration Document

The e-DMR Flow Configuration Document (FCD) is a detailed document that describes configuration and processes for exchanging data with PCS. The e-DMR FCD can be obtained by contacting the Node Help Desk (nodehelpdesk@csc.com).

Step 2: Obtain XML schema

You will also need a copy of the XML schema files associated with the e-DMR flow, which are available in a zip file on the XML Registry page of the Exchange Network Web site at:

http://oaspub.epa.gov/emg/xmlsearch$.startup

You will need the files under the heading "Interim Data Exchange Format (IDEF) DTDs and Schemas." The XML schema files provide the format to which your data is required to conform.

Step 3: Establish a CDX Web Account

To submit e-DMR data through the CDX Node, EPA's Node on the Exchange Network, you will also need to establish a CDX Web account if you do not already have one. The email address associated with the CDX Web account must be the same email address used for the Node account. Submissions made via the Node that do not have a valid Web account cannot be processed. To establish a CDX Web account, contact the CDX Help Desk at 888-890-1995, option 1. To establish an account on your state's node, contact your Node Administrator.

Step 4: Map data to schema

Next, you will need to map your data to the schema for the e-DMR flow. This is the most labor-intensive step in the flow development process. Feel free to contact the Node Help Desk during this part of the process. Currently, e-DMR data must be submitted in an XML format through the Node.

Step 5: Verify data format

Once your data is formatted according to the schema, you may submit it for processing. Status reports pertaining to your submission will be sent to your CDX Web account. Upon successful processing of your data, you will receive an edit report, at which point you need to inform the Node Help Desk that your data has been processed. Your node will then be promoted to PRODUCTION for the e-DMR data flow.

Who Can I Contact for Assistance?

CDX Network Help Desk

The CDX Network Help Desk is staffed Monday-Friday, 8 a.m.-6 p.m. EST to assist you in implementing the e-DMR flow for your node. The Help Desk can be contacted at **(888) 890-1995**, extension 2 or nodehelpdesk@csc.com.

Mentoring Group Message Board on www.exchangenetwork.net. For more information on the Mentoring Group, contact Dave Ellis at (207) 624-9484.

How can I find out more about EPA's e-DMR and the Exchange Network?

Exchange Network Web Site
http://www.exchangenetwork.net

EPA Central Data Exchange Public Web Site
http://www.epa.gov/cdx

EPA Data Standards Web Site
http://www.epa.gov/edr

EPA Network Grants Program
http://www.epa.gov/neengprg/

EPA United States Environmental Protection Agency

Environmental Information exchange Network

DRAFT

Step-by-Step Guidelines

Exchanging Production Data with the Facility Registry System (FRS)

Once your node has been established, you will need to test your node and its ability to exchange data using an EPA data flow, such as FRS. Implementing a data flow will allow you to schedule, submit, and receive data associated with a recognized EPA system. For more information on implementing a node, see "Step-by-Step Guidelines: Establishing a Node on the Environmental Information Exchange Network."

What is FRS?

FRS is a national database containing identification information about facilities, sites, monitoring stations, and other place-based areas subject to environmental regulation or of environmental interest. FRS information conforms to data standards developed jointly by states and EPA including the Facility Information Template for States II (FITS II) and related standards. FRS receives data from other EPA and state systems. The data includes basic facility information, locational information, industrial code values, organizational information, mailing addresses, contact information, and alternative names for a facility.

Step 1: Obtain the Flow Configuration Document

The FRS Flow Configuration Document (FCD) covers the recommended approaches for exchanging FRS data. The FRS FCD can be obtained on the Exchange Network Web site at:

http://www.exchangenetwork.net/documents/Facility_Identification_FCD_Version_1_061804_Final.doc

Step 2: Obtain the FRS Data Exchange Template

The Data Exchange Template (DET) is a flow-specific spreadsheet, which describes the data elements involved in the exchange. The DET is of great value when mapping elements in your data source to the XML schema. Currently, the FRS DET is available at the Registry section of the Exchange Network Web site at:

http://oaspub.epa.gov/emg/xmlsearch$.startup.

Step 3: Obtain FRS XML schema – Fac ID (latest version)

You will also need to obtain the XML schema files associated with the FRS flow. The XML schema files provide the format to which your data must conform. The schema files are available in a zip file on the XML Registry page of the Exchange Network Web site.
FRS has established FacID as the preferred XML schema files for the data exchange. FacID can be used as a consolidated schema, and it does produce very large files. FacID 2.3 can be formatted to nine distinct schema modules, which represent distinct tables in the FITS II models. The facility/site and environmental interest modules must be the first two modules submitted if using the modules.

Step 4: Obtain Node Header/Metadata Information

FRS Node submissions to CDX require that you append a header to the XML instance documents. The header contains contact information and a general description of file's purpose and contents. Information about this metadata can be found on the Exchange Network Web site at:

http://test.epacdxnode.net/faq/ch03s12.html

Step 5: Map data to schema

Next, you will need to map your data to the schema for the FRS flow. This is the most labor-intensive step in the flow development process. Feel free to contact the Exchange Network Help Desk (888-890-1995, extension 2) during this part of the process.

Step 6: Pre-Validate your data

The XML Document Validator Tool can provide a preliminary validation of your data prior to submission. To access it, click on the link for "XML Document Validator" at:

https://tools.epacdxnode.net

Step 7: Test flow communication and FRS document validation

Once you have formatted your data according to the schema and have connected through web services with CDX, you data must be validated by the EPA FRS Team. This assures that FRS will be able to handle your data upon receipt. The CDX Network Help Desk can steer you through this final part of the implementation process. The Network Help Desk will test communication between your node and CDX and assist you in getting your initial facility identification submission validated.

Step 8: Node Promoted to Production Status for the FRS Data Flow

When FRS has validated your data, and you have successfully flowed your data, your node will be promoted to Production status for the FRS flow.

Who Can I Contact for Assistance?

CDX Network Help Desk
The CDX Network Help Desk is staffed Monday-Friday, 8 a.m.-6 p.m. EST to assist you in implementing the FRS flow for your node. The Help Desk can be contacted at **(888) 890-1995**, extension 2 or nodehelpdesk@csc.com.
FRS National System Manager
Pat Garvey, U.S. EPA, at (202) 566-1687 or garvey.patrick@epa.gov

How can I find out more about EPA's FRS System and the Exchange Network?

Exchange Network Web Site
http://www.exchangenetwork.net

EPA Central Data Exchange Public Web Site
http://www.epa.gov/cdx

Environmental Data Standards Council Web Site
http://www.envdatastandards.net/

EPA Network Grants Program
http://www.epa.gov/Networkg/

EPA Envirofacts Warehouse for FRS Data
http://www.epa.gov/enviro/html/facility.html

United States Environmental Protection Agency

Environmental Information Exchange Network

DRAFT

Step-by-Step Guidelines

Exchanging Production Data to the National Emissions Inventory (NEI) System

Once your node has been established, you will need to test your node and its ability to exchange data using an EPA data flow, such as NEI. Implementing a data flow will allow you to schedule, submit, and receive data associated with a recognized EPA system. For more information on implementing a node, see "Step-by-Step Guidelines: Establishing a Node on the Environmental Information Exchange Network."

What is NEI?

The National Emissions Inventory (NEI) System is an EPA database of air emissions information, including data from numerous state and local air agencies, tribes, and existing federal databases. NEI data are used for air dispersion modeling, regional strategy development, regulation setting, air toxics risk assessment, and tracking trends in emissions over time. This database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

Step 1: Obtain the Flow Configuration Document (FCD)

The NEI Flow Configuration Document (FCD) covers the recommended approaches for exchanging NEI data. The NEI FCD is in the final review process and will be available in early 2005.

Step 2: Obtain NEI XML schema

You will also need to obtain the XML schema files associated with the NEI flow. The XML schema files provide the format to which your data is required to conform to facilitate data exchanges. The schema files are available on the Exchange Network Web site, in the Registry Section at:

http://oaspub.epa.gov/emg/xmlsearch$.startup

Step 3: Obtain Node Header/Metadata Information

NEI Node submissions to CDX require that you append a header to the XML instance documents. The header contains contact information and a general description of the file's purpose and contents. Information about this metadata can be found on the Exchange Network Web site at:

http://test.epacdxnode.net/faq/ch03s12.html

Step 4: Establish a CDX Web Account

To submit NEI data through the Central Data Exchange (CDX) Node, EPA's Node on the Exchange Network, you will also need to establish a CDX Web account if you do not already have one. The email address associated with the CDX Web account must be the same email address used for the Node account. Submissions made via the Node that do not have a valid Web account cannot be processed. To establish a CDX Web account, contact the CDX Help Desk at 888-890-1995, option 1. To establish an account on your state's node, contact your Node Administrator.

Step 5: Map data to schema

Next, you will need to map your data to the schema for the NEI flow. This is the most labor-intensive step in the flow development process. Feel free to contact the Exchange Network Help Desk (888-890-1995, extension 2) during this part of the process. NEI data can be submitted to the CDX Node in either XML or zipped format.

Step 6: Verify data format

Once your data is formatted according to the schema, you may submit it for processing. Status reports pertaining to your submission will be sent to your CDX Web account. Upon successful processing of your data, you will receive an e-mail notification, at which point you need to inform the Network Help Desk that your data has been processed. Your node will then be promoted to PRODUCTION for the NEI data flow.

Who Can I Contact for Assistance?

Exchange Network Help Desk

The Exchange Network Help Desk is staffed Monday-Friday, 8 a.m.-6 p.m. EST to assist you in implementing the NEI flow for your state's node. The Help Desk can be contacted at **(888) 890-1995**, extension 2 or nodehelpdesk@csc.com.

How can I find out more about EPA's NEI and the Exchange Network?

Exchange Network Web Site
http://www.exchangenetwork.net

EPA Central Data Exchange Public Web Site
http://www.epa.gov/cdx

EPA Data Standards Web Site
http://www.envdatastandards.net/

EPA Network Grants Program
http://www.epa.gov/Networkg/

Appendix D

Quality Assurance Guidelines

This appendix is designed to assist applicants in ensuring the high quality of the projects they propose to conduct. One of the overarching goals of the Exchange Network is to facilitate sharing and exchange of accurate, timely, and complete environmental data and information. The interoperability of the Exchange Network depends on the use of standard, compatible hardware, software, and technical processes and procedures, including data standards and XML schema. The projects funded by the Exchange Network Grant Program are diverse, but some of the same general approaches, activities, and references can be used to enhance the quality of the projects. The table below lists project phases and specific tasks for node development, data standards/XML schema development, and data flow implementation in the first and second columns; and it then relates these phases and tasks to the applicable quality assurance requirements shown in the third column.

The nature of a specific proposal will determine which of the quality assurance requirements outlined in the table below would apply to the project. Only those quality assurance requirements that relate to the applicant's proposed activities need to be addressed in the applicant's work plan (**Appendix E**). The EPA Review Panel will consider the applicant's quality assurance approaches during the competitive review process (Section V-1, General Evaluation Criteria).

More detailed information about a Quality Management System for Exchange Network Grant Program projects is currently under development and will be posted on the Web site (http://www.epa.gov/Networkg) when available.

QUALITY ASSURANCE GUIDELINES FOR EXCHANGE NETWORK PROJECTS			
Project Phase	**Specific Tasks**	**QA Requirements**	**Resources**
Planning	• Plan the node-building project • Determine if a data standard and/or XML schema already exists for the data • Specify requirements for data flow • Establish coordination among participating organizations • Establish personnel and their responsibilities • Establish resource requirements	• Document/approve the system's requirements (functions to be performed) • Document agreements with trading partners • Designate personnel responsible for quality assurance	• Network Node Specification Guidelines and related node guidance posted on the Exchange Network Web site (http://www.exchangenetwork.net) (Resources page) • "Establishing Your State's Node on the EIEN" in Appendix C of this document • "Trading Partner Agreements: Analysis and Best Practices" http://www.exchangenetwork.net/documents/TPA_Final_Report_Best_Practices.doc
Design/ Development	• Design/develop the node/node client • Choose the appropriate data standards and/or XML schema • Design/develop DET/XML schema, if not available • Choose the appropriate data flow • Design/develop data flow, if not available	• Specify and document the design for the project • Verify and document data mapping to an XML schema for a particular flow • Publish new schemas or new versions of schemas to the Network Quality Assurance Web Services (NQAWS) • Develop and publish schematron rules to the NQAWS • Confirm that the design complies with Network requirements	• Demonstrated Node Configurations (DNCs) for node development are in the Tool Box section of the Exchange Network Web site (http://www.exchangenetwork.net) • Environmental Data Standards Council (EDSC)-approved Data Standards (http://www.envdatastandards.net • XML schema and schema components that have been endorsed by the State/EPA Network Steering Board's Technical Resource Group (TRG) can be found in the Registry at www.exchangenetwork.net
Implementation	• Assemble the configuration that has been developed	• Confirm that the implemented system matches the design	• EDSC-approved data standards information (http://www.epa.gov/edr)

QUALITY ASSURANCE GUIDELINES FOR EXCHANGE NETWORK PROJECTS			
Project Phase	**Specific Tasks**	**QA Requirements**	**Resources**
	• Implement the data flows for which data will be submitted	• Justify/document any deviations from specifications • Verify and document that the step-by-step guidelines for implementing a particular flow are being followed, if such guidelines exist	• Schema Review Process www.exchangenetwork.net/documents/SPRSC_final.doc
Test	• Test functionality of the node • Test the data flow on CDX or by other means, if applicable	• Test the node's functionality using the Test Tool, and determine if modifications are necessary • Validate system operation (data standards and schema) and formalize acceptance by having the CDX Node Help Desk test the node on a particular flow • Verify and document compliance with the node functional specification and exchange of data with the destination Node	• Node Test Site Ver 1.0 and 1.1 (and associated links) and the NodeWinClient tool, developed by Windsor Solutions are available via a link in the Tool Box section at http://www.exchangenetwork.net
Operation and Maintenance	• Document operational procedures • Establish training requirements and track any required training • Ensure network security • Submit production data	• Develop a Node User's Manual that provides instructions for each data flow • Document any training requirements for operators or users • Control/document each version or update of the system • Develop and document a process for error notification and error resolution	• Security Guidelines are available via link in the Resources section at http://www.exchangenetwork.net
Assessment	• Conduct ongoing inspections • Assess needs for upgrades, improvements, changes to format, hardware, and software	• Conduct routine inspections of system performance and information content • Carry out ongoing audits and assessments • Develop and implement a corrective action process • Establish process for continuous improvement	

Appendix E

Detailed Application Instructions

Applicants for the FY 2005 Exchange Network Grant Program must submit a complete application package to EPA, which is postmarked by January 15, 2005. This Appendix provides detailed instructions on preparing the full application package.

Application Package

The application package *must* include the following materials:

- Number of Copies: Original plus two copies
- Cover Letter
- Standard Form (SF) 424, Application for Federal Assistance – with original signature and including the following:
  - SF-424A, Budget Information for Non-Construction Programs
  - SF-424B, Assurances for Non-Construction Programs
- Certification Regarding Lobbying, if the application is for over $100,000
- SF-LLL, Disclosure of Lobbying Activities, if the applicant's organization is involved in lobbying
- EPA Form 4700-4, Pre-Award Compliance Review Report for All Applicants Requesting Federal Financial Assistance
- EPA Form 5700-54, Key Contacts Form
- Work Plan
- Quality Assurance Narrative Statement
- Detailed Itemized Budget
- Copy of Negotiated Indirect Cost Rate Agreement (if indirect costs are included in the project budget)
- Biographical Sketches for the Project Manager(s)
- One Self-Addressed Envelope, if the applicant would like to be notified when EPA receives the application

Cover Letter

The cover letter *must* include the following information:

- Name of the applicant's organization (i.e., state/tribe/territory or tribal consortium, and agency or department)
- DUNS number
- Name of the Project Manager
- Category of grant requested (i.e., Readiness, Implementation, or Challenge)
- Amount of funding requested
- Formal project partners (i.e., not EPA, contractors, or others within the same agency or organization)

- Coordination that will occur between IT/IM offices and environmental media programs within the state, territory, or tribe to ensure the project's success
- Preferred assistance vehicle, i.e., as a grant or cooperative agreement (see Section II of this solicitation notice)
- Desired amount and form of funding, i.e., direct funding and/or EPA-provided in-kind services in lieu of direct funding and the dollar amount requested of each
- If the application is recommended for funding, whether the applicant would like the award to be incorporated into a Performance Partnership Grant (PPG) or a Consolidated Grant (CG).

Work Plan

The work plan must be prepared in WordPerfect or Microsoft Word, using a 12-point font and 1-inch margins. It must not exceed ten 10 single-spaced pages. The work plan must be in the format outlined below.

1. General Project Information

a. Fiscal year (i.e., FY 2005) and grant category (Readiness, Implementation, or Challenge)
b. Total amount of funding requested
c. Name of the applicant organization, i.e., state/tribe/territory or tribal consortium and agency/department
d. DUNS number
e. Name of the Project Manager(s) and related contact information (name, title, mailing address, phone, fax, and email address)
f. Formal project partners, their roles and responsibilities, and how the funds will be distributed (i.e., not EPA, contractors, or others within the same organization)
g. Coordination that will occur between the IT/IM offices and environmental media programs within the state, tribe, territory to ensure the project's success
h. Preferred assistance vehicle (i.e., a grant or cooperative agreement) and the rationale, based on the extent of EPA involvement expected in the project (EPA will issue all Challenge Category awards and awards involving in-kind services as cooperative agreements.)
i. Preferred form of funding (i.e., direct funding and/or EPA in-kind services in lieu of direct funding); and if requesting in-kind services, the rationale and dollar amount of in-kind services desired

2. Project Purpose, Goals, Milestones, and Expected Benefits

Describe the purpose and goals of the project. Clearly state whether the project involves one or more of the following: the development of Exchange Network nodes or node clients; the development of specific data flows; the development of data standards or XML schema; geospatial activities; human health-related activities; collaborative efforts to advance the development and utility of the Exchange Network; and/or other activities.

Outline the goals and milestones (i.e., tasks with associated target completion dates) along with expected benefits in table format, as shown below. The tasks outlined should span the two-year project period.

Goal	Task	Target Date	Expected Benefits
Goal 1	Task 1.1	month/year	
	Task 1.2		
Goal 2	Task 2.1		
	Task 2.2		
Goal 3	Task 3.1		
	Task 3.2		

3. Node Development

If applying for a Readiness Category award and planning to develop an operational node or implement a node client, outline the technical tasks/milestones that will be undertaken to ensure that the node or node client is operational by the end of the two-year project period.

If applying for an Implementation Category award, describe the current status and expected completion date of node/node client development activities. If an operational node or node client has not yet been implemented, outline the tasks/milestones that will be pursued to ensure that the node or node client will be operational by the end of the two-year project period for which it was funded (e.g., by the end of August 2004 for FY 2002 awards, by the end of August 2005 for FY 2003 awards, and by the end of August 2006 for FY 2004 awards).

An o*perational node* must meet all of the following criteria:

- Demonstration of *all* nine Exchange Network web methods – authenticate, solicit, query, get status, submit, notify, node ping, download, and node services (see *Exchange Network Node Implementation Guide v.1.0*, April 2003, http://www.exchangenetwork.net, Tool Box);
- Implementation of the minimum Exchange Network security practices (e.g., including the use of Network Authorization and Authentication Services);
- Ability to submit data to EPA or other Exchange Network partners;
- Ability to receive data from EPA or other Exchange Network partners; and
- Ability to publish data to the Exchange Network by responding to specific data queries from authorized Exchange Network partners.

A n*ode client* can do the following:

- Submit data to EPA or other partners using the Exchange Network;
- Request data from EPA or other partners using the Exchange Network; and
- Receive data from EPA or other partners using the Exchange Network.

Node clients can *not* publish data on the Exchange Network (i.e., they can not respond to data queries from other Exchange Network partners).

4. Integrated Project Team Participation

If planning to participate in or lead an Integrated Project Team (IPT), clearly define and describe the purpose and business case for the IPT and how it will support the Exchange Network. In addition, outline how the IPT will operate and what the deliverables are expected to be. Discuss how the IPT members will be trained or become knowledgeable about relevant Exchange Network activities. Identify how the IPT will provide information to the Network Steering Board and who will provide this information.

5. Quality Assurance

Briefly outline the approaches that will be used to ensure the high quality of the project. Examples might include the use of Exchange Network technical reference documents, the use of EDSC-approved data standards, the use of XML schema and schema components endorsed by the Network Steering Board (NSB)/Technical Resources Group (TRG), the participation in Integrated Project Teams, etc. See **Appendix D** for a general guidance on quality assurance.

6. Project Budget

Outline the project budget for the two-year project period. Include the total costs requested for personnel, fringe benefits, travel, equipment, supplies, contractual services, other costs (i.e., including any requested EPA-provided in-kind services), and indirect charges. (See "Other Required Application Materials" below for more detail on preparing the project budget.)

7. Project's Relationship to Other Exchange Network Activities

Describe how the proposed project relates to the Exchange Network as a whole and how it builds on previous Exchange Network activities.

Applicants who received an Exchange Network grant in FY 2002, FY 2003, and/or FY 2004 must briefly outline the type(s) of grants received (i.e., One Stop, Readiness, Implementation, or Challenge), the funding amount(s), major accomplishments to date, and the expected completion dates for major tasks not yet completed (e.g., node/node client development or data flow development).

If the proposed project builds on successful projects conducted by other Exchange Network grantees, describe the collaboration that has already occurred or will occur with these Exchange Network partners and how the proposed project will build on the accomplishments and lessons learned by these other partners.

Other Required Application Materials

The forms required below can be downloaded from EPA's Office of Grants and Debarment Web site at http://www.epa.gov/ogd/AppKit/application.htm.

- **Standard Form (SF) 424, Application for Federal Assistance**
  The organizational Dun and Bradstreet (D&B) Data Universal Number System (DUNS) Number must be included on the SF-424. Organizations can receive a DUNS number at no cost by calling the toll-free DUNS Number request line at 1-866-705-5711.

- **SF-424A, Budget Information for Non-Construction Programs**
  The total amount of federal funding requested should be shown on line 5(e) and on line 6(k). If all or part of the federal assistance is being requested in the form of EPA-provided in-kind services, the amount of EPA in-kind services should be noted on line 6(h) with the notation "requested EPA-provided in kind services". If indirect costs are included, the amount should be indicated on line 6(j). The indirect cost rate (i.e., a percentage), the base (e.g., personnel costs and fringe benefits), and the amount should also be indicated on line 22. (If indirect costs are requested, a copy of the Indirect Cost Rate Agreement must be submitted as part of the application package.)

- **SF-424B, Assurances for Non-Construction Programs**
  The SF-424B must be signed by an authorized official of the applicant's organization.

- **Certification Regarding Lobbying**
  Any lobbying activities must be acknowledged on this form.

- **SF-LLL, Pre-Award Disclosure of Lobbying Activities**
  The SF-LLL form must be completed if the applicant's organization is involved in any lobbying activities.

- **EPA Form 4700-4, Pre-Award Compliance Review Report**
  EPA Form 4700-4 must be signed by an authorized official of the applicant's organization.

- **EPA Form 5700-54, Key Contacts Form**
  If a number of senior project staff are involved in the project, in addition to the Project Manager, include both the Key Contacts Form and the Key Contacts Form/Additional.

- **Detailed Itemized Budget**
  The itemized budget must include at least the level of detail described below:
  - Personnel – List all staff positions by title. Give the annual salary of each individual, the percentage of the individual's time that would be assigned to the project, and total personnel cost for the budget period. (See Section VI - 2 of this solicitation notice for limitations on salary rates that may be paid to individual consultants.)
  - Fringe Benefits – Identify the fringe benefit rate (i.e., percentage), the basis for its computation, and the types of benefits included.

- Travel – Specify the mileage, per diem, and estimated number of trips – specifying in-state and out-of-state – and other costs for each type of travel.
- Equipment – Identify each item of equipment to be purchased which has an estimated acquisition cost of $5,000 or more per unit and a useful lifetime of more than one year. Items with a unit cost of less than $5,000 are deemed to be supplies, pursuant to 40 CFR 31.3 and 30.2.
- Supplies – Supplies include all tangible personal property other than "equipment." The budget detail should identify categories of supplies to be procured (e.g., laboratory supplies or office supplies).
- Contractual – Identify each proposed contract vehicle and specify its purpose and estimated cost.
- Other – List each item in sufficient detail for EPA to determine whether the costs are reasonable or allowable. If requesting EPA-provided in-kind services, the amount of the requested in-kind services should be indicated here.
- Indirect Charges – If indirect charges are included in the budget, indicate the approved rate, the base, and the total indirect charges requested.

- **Negotiated Indirect Cost Rate Agreement**
  If the applicant wishes to include indirect costs in the proposed budget, a copy of the applicant organization's Indirect Cost Rate Agreement must be submitted in the application package.

- **Biographical Sketches for the Project Manager(s)**
  Each biographical sketch(s) should outline the education, work history, and knowledge/expertise that relate to the individual's ability to manage or participate in the proposed project.